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1877 EWART, WILLIAM, M.B.: 33 Somerset Street, Portman Square, W.

ELECTED

Orig Memb FAGGE, CHARLES HILTON, M.D. (C.), Assistant Physician to Guy's Hospital: 11 St. Thomas's Street, Southwark, S.E. (C. 1875–7.)

1868 FAIRBANK, FREDERICK ROYSTON, M.D.: 46 Hall Gate, Doncaster.

1868 FALCONER, RANDLE WILBRAHAM, M.D., Physician to the Royal United and Mineral Water Hospitals, Bath.

1872 FARQUHARSON, ROBERT, M.D., Lecturer on Materia Medica at St. Mary's Hospital: 23 Brook Street, Grosvenor Square, W.

1872 FENWICK, J. C. J., M.B.: 16 Old Elvet, Durham.

1876 FINLAY, DAVID WHITE, M.D., Medical Registrar, Middlesex Hospital: 21 New Cavendish Street, W.

1868 FISH, JOHN CROCKETT, M.B.: 92 Wimpole Street, Cavendish Square, W. (C. 1869-70.)

1872 FISHER, Frederic R., Assistant Surgeon to the Victoria Hospital for Sick Children: 79 Grosvenor Street, W.

1872 FOX, TILBURY, M.D., Physician to the Skin Department of University College Hospital: 14 Harley Street, W.

Orig Memb FOX, WILSON, M.D., F.R.S., Physician Extraordinary to H.M. the Queen; Holme Professor of Clinical Medicine in University College, and Physician to University College Hospital: 67 Grosvenor Street, W. (C. 1873.)

1868 GANT, FREDERICK JAMES (C.), Surgeon to the Royal Free Hospital: 16 Connaught Square, W. (C. 1877.)

1868 GLOVER, JAMES GREY, M.D., Hon. Surgeon to the Holloway and North Islington Dispensary: 33 Compton Terrace, Islington, N.

1875 GODLEE, RICKMAN JOHN, M.S., M.B., Assistant Surgeon to Charing Cross Hospital, and to University College Hospital: 22 Henrietta Street, Cavendish Square, W.

1875 GOODHART, JAMES FREDERICK, M.D., Assistant Physician to Guy's Hospital: 27 Weymouth Street, Portland Place, W.

1869 GOODRIDGE, HENRY FREDERICK AUGUSTUS, M.D., Physician to the Bath Royal United Hospital: Bath.

1877 GOULD, A. PEARCE, M.S., Lecturer on Anatomy at the Westminster Hospital: 93 Gower Street, Bedford Square, W.C.

1871 GOVER, ROBERT M., M.B., Medical Officer to the Millbank Prison, Millbank, S.W.

1875 GOWERS, WILLIAM RICHARD, M.D., Assistant Physician to University College Hospital: 50 Queen Anne Street, Cavendish Square, W.

ELECTED

1868 GREEN, T. HENRY, M.D. (C.), Physician to, and Lecturer on Pathology at, the Charing Cross Hospital: 74 Wimpole Street, W. (C. 1877.)

1875 GREENFIELD, WILLIAM SMITH, M.D., Assistant Physician to St. Thomas's Hospital: 93 Wimpole Street, W.

Orig Memb GREENHALGH, ROBERT, M.D., Physician Accoucheur to, and Lecturer on Midwifery at, St. Bartholomew's Hospital: 72 Grosvenor Street, W.

Orig Memb GREENHOW, EDWARD HEADLAM, M.D., F.R.S. (*Treasurer*), Physician to the Middlesex Hospital: 14A Manchester Square, W. (T. 1867–77.)

1874 GRIGG, WILLIAM CHAPMAN, M.D., Assistant Obstetric Physician to the Westminster Hospital; Physician to the In-Patients, Queen Charlotte's Lying-in Hospital; Assistant Physician to the Victoria Hospital for Children: 6 Curzon Street, Mayfair, W.

1868 †GUENEAU DE MUSSY, HENRI, M.D.: 15 Rue du Cirque, Paris.

Orig Memb GULL, Sir WILLIAM WITHEY, Bart., M.D., D.C.L., F.R.S., Physician Extraordinary to the Queen: 74 Brook Street, W. (V.P. 1868–70, P. 1871–2.)

1870 GWYNN, EDMUND, M.D.: 6 Hampstead Hill Gardens, N.W.

Orig Memb HABERSHON, SAMUEL OSBORNE, M.D., Physician to Guy's Hospital: 70 Brook Street, W. (C. 1873.)

1875 HALE, C.D.B.: 3 Longridge Road, Earl's Court, W.

1873 HARLEY, GEORGE, M.D., F.R.S.:

Orig Memb HARLEY, JOHN, M.D., F.L.S. (C.), Assistant Physician to St. Thomas's Hospital: 39 Brook Street, Grosvenor Square, W. (C. 1875.)

1872 HARRIS, HENRY, M.D.: Trengweath, Redruth, Cornwall.

Orig Memb HART, ERNEST: 37 Great Queen Street, W.C. (C. 1867–8.)

1869 HAWARD, J. WARRINGTON (C.), Assistant Surgeon to St. George's Hospital; Assistant Surgeon to the Hospital for Sick Children: 5 Montagu Street, Portman Square, W. (C. 1876.)

1868 HAY, THOMAS B.: Christ Church, New Zealand.

Orig Memb HEATH, CHRISTOPHER (V.P.), Surgeon to University College Hospital, and Holme Professor of Clinical Surgery in University College: 36 Cavendish Square, W. (C. 1867–71, V.P. 1876–77.)

1868 HESLOP, THOMAS PRETIOUS, M.D., Physician to the Children's Hospital, Birmingham.

ELECTED.

1868 HEWAN, ARCHIBALD, M.D.: 9 Chester Square, S.W.

Orig Memb HEWETT, PRESCOTT GARDNER, F.R.S., Surgeon Extraordinary to H.M. the Queen; Consulting Surgeon to St. George's Hospital: 1 Chesterfield Street, Mayfair, W. (V.P. 1869–71, P. 1873–4.)

Orig Memb HEWITT, GRAILY, M.D., Professor of Midwifery in University College, and Obstetric Physician to University College Hospital: 36 Berkeley Square, W.

Orig Memb HICKS, J. BRAXTON, M.D., F.R.S., F.L.S. (C.), Physician Accoucheur to, and Lecturer on Midwifery and the Diseases of Women and Children at, Guy's Hospital; 24 George Street, Hanover Square, W. (C. 1875–77.)

1876 HIGGENS, CHARLES, Assistant Ophthalmic Surgeon to Guy's Hospital: 38 Brook Street, Grosvenor Square, W.

1868 HILL, BERKELEY, M.B., Professor of Clinical Surgery in University College, London, Surgeon to University College Hospital, and Surgeon to the Lock Hospital: 55 Wimpole Street, W. (C. 1870–1.)

1868 HILL, THOMAS HARVEY: 4 Stanhope Terrace, Bayswater, W.

Orig Memb HILTON, JOHN, F.R.S., Surgeon Extraordinary to H.M. the Queen; Consulting Surgeon to Guy's Hospital: 10 New Broad Street, E.C. (V.P. 1867–9.)

1874 HOLDERNESS, WILLIAM BROWN, Surgeon to the Huntingdon County Hospital: Wykeham House, Huntingdon.

1868 †HOLMAN, CONSTANTINE, M.D.: Reigate, Surrey.

1868 HOLMAN, WILLIAM HENRY, M.B.: 68 Adelaide Road South, Hampstead, N.W.

Orig Memb HOLMES, TIMOTHY, Surgeon to, and Lecturer on Surgery at, St. George's Hospital; Surgeon-in-Chief to the Metropolitan Police Force: 18 Great Cumberland Place, Hyde Park, W. (C. 1867–9, V.P. 1873–5.)

Orig Memb HOLT, BARNARD WIGHT, Consulting Surgeon to, and Lecturer on Clinical Surgery at, the Westminster Hospital; Medical Officer of Health for Westminster: 14 Savile Row, W.

Orig Memb HOLTHOUSE, CARSTEN, Surgeon to, and Lecturer on Surgery at, the Westminster Hospital; Consulting Surgeon to the South London Ophthalmic Hospital: 7 George Street, Hanover Square, W. (C. 1870–2.)

1873 HOPE, WILLIAM, M.D., Senior Physician to Queen Charlotte's Lying-in Hospital: 5 Bolton Row, Mayfair, W.

ELECTED

1871 HOUGHTON, HENRY G., L.K.Q.C.P. Ireland: 6 Mount Street, Grosvenor Square, W.

1876 HOWSE, HENRY GREENWAY, M.S., Surgeon to Guy's Hospital, and to the Evelina Hospital for Sick Children: 10 St. Thomas's Street, S.E.

Orig Memb HULKE, JOHN WHITAKER, F.R.S., Surgeon to, and Lecturer on Surgery at, the Middlesex Hospital, and Surgeon to the Royal London Ophthalmic Hospital: 10 Old Burlington Street, W. (C. 1867–9.)

Orig Memb HUMPHRY, GEORGE MURRAY, M.D., F.R.S., Professor of Anatomy in the University of Cambridge, and Surgeon to Addenbrooke's Hospital, Cambridge. (V.P. 1867–70.)

1871 †HUNT, EZRA: 18 Belmont, Bath.

Orig Memb HUTCHINSON, JONATHAN, Surgeon to, and Lecturer on Surgery at, the London Hospital; Surgeon to the Hospital for Diseases of the Skin, and Surgeon to the Royal London Ophthalmic Hospital: 15 Cavendish Square, W. (C. 1867–8, V.P. 1875–76.)

1875 IRVINE, JAMES PEARSON, M.D., Assistant Physician to, and Lecturer on Forensic Medicine at the Charing Cross Hospital: 3 Mansfield Street, Cavendish Square, W.

Orig Memb JACKSON, J. HUGHLINGS, M.D., Physician to, and Lecturer on Physiology at, the London Hospital; Physician to the National Hospital for the Paralysed and Epileptic: 3 Manchester Square, W. (C. 1872–3.)

1877 JACOBSON, WALTER HAMILTON ACLAND, M.B., F.R.C.S.: 31 Finsbury Square.

Orig Memb JENNER, Sir WILLIAM, Bart., M.D., K.C.B., D.C.L., F.R.S., Physician in Ordinary to H.M. the Queen and to H.R.H. the Prince of Wales; Physician to University College Hospital: 63 Brook Street, W. (V.P. 1867–70, P. 1875–6.)

1875 JESSETT, FREDERICK BOWREMAN: Pier Road, Erith, Kent.

Orig Memb JOHNSON, GEORGE, M.D., F.R.S., Physician to King's College Hospital: 11 Savile Row, W. (V.P. 1874–6.)

Orig Memb JONES, SYDNEY, M.B., Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital: 16 George Street, Hanover Square, W. (C. 1867–8.)

1872 JONES, THOMAS R., M.D., Assistant Physician, Victoria Hospital for Sick Children: 19 Chapel Street, Belgrave Square, S.W.

1876 JORDAN, FURNEAUX, Surgeon to the Queen's Hospital, Birmingham: 22 Colmore Row, Birmingham.

Elected	
Orig Memb	Kelly, Charles, M.D., Medical Officer of Health for the West Sussex District: Worthing, Sussex.
1868	Kesteven, William B., M.D.: 401 Holloway Road, N. (C. 1870–2.)
1873	Lacy, C. de Lacy, 5 Ovington Square, Brompton
1868	Langmore, John C., M.B.: 20 Oxford Terrace, Hyde Park, W. (C. 1872–5.)
Orig Memb	Langton, John, Assistant Surgeon to, and Demonstrator of Anatomy at, St. Bartholomew's Hospital: 2 Harley Street, W.
1869	Lawrence, James E.: High Street, Wandsworth, S.W.
Orig Memb	Lawson, George, Surgeon to, and Lecturer on Practical Surgery at, the Middlesex Hospital, and Surgeon to the Royal London Ophthalmic Hospital: 12 Harley Street, W. (S. 1871–3, C. 1874–6.)
1869	Leach, Harry, Medical Officer of the Port of London: 12 Rutland Park Villas, Catford Bridge, S.E.
1876	Lee, Alfred Robert: 30 Queen Street, Cheapside, E.C.
Orig Memb	Lee, Henry, Surgeon to, and Lecturer on Clinical Surgery at, St. George's Hospital: 9 Savile Row, W. (V.P. 1870–2.)
1874	Lee, Robert James, M.D., Assistant Physician to the Hospital for Sick Children: 28 Maddox Street, Bond Street, W.
1877	Lees, David B., M.D., Assistant Physician to Charing Cross Hospital: Thurloe House, Thurloe Square, S.W.
1877	Leggatt, Alfred: 13 William Street, Lowndes Square, S.W.
1868	Little, Louis Stromeyer: China.
1875	Liveing, Edward, M.D.: 52 Queen Anne Street, Cavendish Square, W.
1872	Liveing, Robert, M.D.: 11 Manchester Square, W.
1876	Longhurst, Arthur Edwin Temple, M.D.: 13 Wilton Street, S.W.
1876	Lowne, Benjamin Thompson: 7 Devonshire Street, Portland Place, W.
1876	Lucas, R. Clement, M.B., B.S., Assistant Surgeon to Guy's Hospital: 4 St. Thomas's Street, S.E.
1871	MacCormac, William (C.), Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital: 13 Harley Street, W. (C. 1877.)

ELECTED

Orig Memb MACKENZIE, MORELL, M.D., Physician to the Hospital for Diseases of the Throat: 19 Harley Street, Cavendish Square, W.

1877 MACLEAN, THOMAS EDWIN, M.B., B.S.: 60 Gower Street, W.C.

1875 MACNAMARA, CHARLES, Surgeon to the Westminster Hospital: 13 Grosvenor Street, W.

1874 MAHOMED, FRED. AKBAR, M.D., Medical Registrar, Guy's Hospital: 31 Lower Seymour Street, Portman Square, W.

Orig Memb †MARCET, WILLIAM, M.D., F.R.S.: Villa Bianca, Cannes. (C. 1867–9.)

1868 MARSH, F. HOWARD (C.), Assistant Surgeon to St. Bartholomew's Hospital: 36 Bruton Street, Berkeley Square, W. (C. 1876–77.)

1875 MARSHALL, F. J., Resident Medical Officer, St. George's Hospital, W.

Orig Memb MAUNDER, CHARLES F., Surgeon to, and Lecturer on Clinical Surgery, and Demonstrator of Operative Surgery at, the London Hospital: 16 Queen Anne Street, W. (C. 1870–1.)

1868 †MAY, EDWARD HOOPER, M.D.: High Cross, Tottenham, Middlesex, N.

1868 MEADOWS, ALFRED, M.D., Physician Accoucheur to, and Lecturer on Midwifery at, St. Mary's Hospital: 27 George Street, Hanover Square, W. (C. 1871–4.)

1876 MELLADEW, H. F. L., M.D., Surgeon, Royal Horse Guards: Regent's Park Barracks, N.W.

1873 MICKLE, WILLIAM JULIUS, M.D., Physician Superintendent, Grove Hall Asylum, Bow, E.

1877 MILNER, EDWARD, Surgical Registrar, St. Bartholomew's Hospital: 32 New Cavendish Street, Portland Place, W.

1874 MORGAN, JOHN HAMMOND: 12 Chapel Street, Park Lane, W.

1877 MORRIS HENRY, M.B., Senior Assistant Surgeon to, and Lecturer on Anatomy at, the Middlesex Hospital: 2 Mansfield Street, Portland Place, W.

Orig Memb MOXON, WALTER, M.D., F.L.S., Physician to, and Lecturer on Pathology and Demonstrator of Morbid Anatomy at, Guy's Hospital: 6 Finsbury Circus, E.C. (C. 1874–6.)

Orig Memb MURCHISON, CHARLES, M.D., LL.D., F.R.S. (V.P.), Physician to, and Lecturer on Medicine at, St. Thomas's Hospital, Consulting Physician to the London Fever Hospital: 79 Wimpole Street, W. (C. 1867–9, V.P. 1876–77.)

ELECTED

1875 MURPHY, SHIRLEY F., London Fever Hospital, Liverpool Road, Islington, N.

1868 MYERS, ARTHUR BOWEN RICHARDS (C.), Surgeon to 1st Battalion of the Coldstream Guards: Vincent Square, Westminster, S.W. (C. 1877.)

1873 MYRTLE, ANDREW S., M.D.: Harrogate.

1874 NANKIVELL, ARTHUR WOLCOT, Resident Surgeon, St. Bartholomew's Hospital, Chatham.

1875 NETTLESHIP, EDWARD: 4 Wimpole St., Cavendish Sq., W.

Orig Memb NORTON, ARTHUR TREHERN (C.), Assistant Surgeon to, and Lecturer on Anatomy at, St. Mary's Hospital: 6 Wimpole Street, W. (C. 1874–6.)

Orig Memb NUNN, THOMAS WILLIAM, Surgeon to the Middlesex Hospital: 8 Stratford Place, Oxford Street, W. (C. 1873–4.)

Orig Memb OGLE, JOHN WILLIAM, M.D., Consulting Physician to St. George's Hospital: 30 Cavendish Square, W. (C. 1867–8.)

1868 †OGLE, WILLIAM, M.D., Physician to the Derbyshire General Infirmary: 98 Friar Gate, Derby.

1869 OLDFIELD, E., M.D.: Surinam.

1868 OPPERT, FRANCIS, M.D.: Germany.

1877 ORD, WILLIAM MILLER, M.B., Physician to, and Lecturer on Medicine at, St. Thomas's Hospital: 7 Brook Street, Hanover Square, W.

1876 OTTLEY, WALTER, M.B., Demonstrator of Anatomy at University College: 7 Nottingham Place, W.

1877 OWEN, ISAMBARD, M.B., Medical Registrar, St. George's Hospital: 41 Gloucester Gardens, Bishop's Road, W.

1875 PAGE, HERBERT W., M.C., M.B., Assistant Surgeon to St. Mary's Hospital: 28 New Cavendish Street, W.

Orig Memb PAGET, Sir JAMES, Bart., D.C.L., LL.D., F.R.S., Sergeant-Surgeon Extraordinary to H.M. the Queen; Surgeon in Ordinary to H.R.H. the Prince of Wales; Consulting Surgeon to St. Bartholomew's Hospital: 1 Harewood Place, Hanover Square, W. (V.P. 1867–8, P. 1869–70.)

1873 PARKER, ROBERT WILLIAM: 8 Old Cavendish Street, W.

Orig Memb PAVY, FREDERICK WILLIAM, M.D., F.R.S., Physician to Guy's Hospital: 35 Grosvenor Street, W. (C. 1869–71.)

Orig Memb PEACOCK, THOMAS BEVILL, M.D., Physician to St. Thomas's Hospital, Consulting Physician to the City of London Hospital for Diseases of the Chest: 20 Finsbury Circus, E.C. (C. 1867–8, V.P. 1869–71.)

ELECTED

1874 PHILLIPS, CHARLES DOUGLAS F., M.D.: 107 Lancaster Gate, Hyde Park, W.

Orig Memb PICK, THOMAS PICKERING (*Hon. Secretary*), Assistant Surgeon to, and Lecturer on Anatomy at, St. George's Hospital; Surgeon to the Belgrave Hospital for Children: 13 South Eaton Place, Eaton Sq., S.W. (S. 1874–7.)

1871 †PLAYNE, ALFRED, M.B.: Maidenhead.

Orig Memb POLLOCK, A. JULIUS, M.D. (C.), Physician to the Charing Cross Hospital; Physician to the Foundling Hospital: 85 Harley Street, Cavendish Square, W. (C. 1877.)

1875 POLLOCK, GEORGE DAVID, Surgeon in Ordinary to H.R.H. the Prince of Wales; Surgeon to St. George's Hospital: 36 Grosvenor Street, W.

1868 POLLOCK, JAMES EDWARD, M.D., Physician to the Hospital for Consumption and Diseases of the Chest: 52 Upper Brook Street, Grosvenor Square, W.

1871 POORE, GEORGE VIVIAN, M.D., Assistant Physician to University College Hospital: 30 Wimpole Street, W.

1873 PORT, HEINRICH, M.D., Assistant Physician to the German Hospital: 10 Finsbury Place North, E.C.

Orig Memb POWELL, R. DOUGLAS, M.D. (C.), Physician to the Hospital for Consumption and Diseases of the Chest, Brompton: 15 Henrietta Street, Cavendish Square, W. (C. 1874–6.)

1868 PRENTIS, CHARLES, Surgeon Major, Bengal Medical Service.

Orig Memb QUAIN, RICHARD, M.D., F.R.S., Consulting Physician to the Hospital for Consumption and Diseases of the Chest: 67 Harley Street, W. (C. 1867–9.)

Orig Memb RAMSKILL, J. SPENCE, M.D., Physician to, and Lecturer on Medicine at, the London Hospital; Senior Physician to the National Hospital for the Paralysed and Epileptic: 5 St. Helen's Place, Bishopsgate Street, E.C.

1873 RANSFORD, GIFFORD: 27 Gloucester Place, Hyde Park, W.

1868 RASCH, ADOLPHUS A., M.D., Physician for Diseases of Women to the German Hospital: 7 South Street, Finsbury Square, E.C.

1874 REE, FREDERICK, Norfolk Lodge, Grange Park, Ealing.

Orig Memb REES, GEORGE OWEN, M.D., F.R.S., Consulting Physician to Guy's Hospital: 26 Albemarle Street, W. (V.P. 1871–3.)

1868 REEVES, HENRY A., Assistant Surgeon to the London Hospital: 27A Finsbury Square, E.C.

ELECTED

1868 RENDLE, JAMES D., M.D., Medical Officer to the Government Convict Prison, Brixton: Park Hill, Clapham Park, S.W. (C. 1869–70.)

Orig Memb REYNOLDS, JOHN RUSSELL, M.D., F.R.S., Examiner in Medicine at the University of London; Professor of the Principles and Practice of Medicine in University College; Physician to University College Hospital: 38 Grosvenor Street, W. (C. 1867–8.)

1868 RICE, MICHAEL W., M.D. (C.): 34 Cadogan Place, S.W. (C. 1876–77.)

Orig Memb RINGER, SYDNEY, M.D., Professor of Materia Medica in University College, and Physician to University College Hospital: 15 Cavendish Place, W. (C. 1871–2.)

1877 RIVINGTON, WALTER, M.S., M.B., Surgeon to, and Lecturer on Anatomy at, the London Hospital: 22 Finsbury Square, E.C.

1873 †ROBERTS, DAVID LLOYD, M.D., Physician to St. Mary's Hospital, Manchester: 23 St. John Street, Manchester.

1876 ROBINSON, FREDERICK, M.D., Surgeon-Major, Scots Fusilier Guards: 41 Claverton Terrace, St. George's Road, S.W.

1875 ROGERS, WILLIAM RICHARD, M.D.: 56 Berners Street, Oxford Street, W.

Orig Memb ROUSE, JAMES (C.), Surgeon to St. George's Hospital, and to the Royal Ophthalmic Hospital, Charing Cross: 2 Wilton Street, Grosvenor Place, S.W. (C. 1875–77.)

1874 ROWLAND, EDWARD R.: Pelham Lodge, Isleworth.

1868 SANDERSON, HUGH JAMES, M.D.: 26 Upper Berkeley Street, W.

Orig Memb SANDERSON, JOHN BURDON, M.D., F.R.S., Jodrell Professor of Human Physiology in University College: 49 Queen Anne Street, W. (S. 1867–9, C. 1870, V.P. 1871–3.)

1873 SAVAGE, GEORGE HENRY, M.D.: Bethlehem Royal Hospital, Lambeth Road, S.E.

1869 SEDGWICK, LEONARD WILLIAM, M.D.: 2 Gloucester Terrace, Hyde Park, W.

1875 SHERWOOD, ARTHUR PAUL, St. George's Hospital.

1876 SHUTER, JAMES, M.B., St. Bartholomew's Hospital, and Lawn House, Tufnell Park Road, Holloway, N.

Orig Memb SIBLEY, SEPTIMUS WILLIAM: 4 Savile Row, W. (C. 1871–4.)

Orig Memb SIMON, JOHN, D.C.L., F.R.S., Surgeon to St. Thomas's Hospital: 40 Kensington Square, W. (V.P. 1867–70.)

ELECTED

1873 SIMPSON, GEORGE M., M.D., C.M.: Hampstead Lane, Highgate, N.

1872 SLIGHT, GEORGE, M.D.: 25 Brewer St., Regent St., W.

1876 SMITH, BARTON HENRY LIDDELL, M.B., C.M.: 3 Queen Street, May Fair, W.

1875 SMITH, GILBART, M.A., M.B., Physician to the Royal Hospital for Diseases of the Chest, City Road: 68 Harley Street, Cavendish Square, W.

1868 SMITH, HEYWOOD, M.D., Physician to the Hospital for Women: 2 Portugal Street, Grosvenor Square, W.

1868 SMITH, PROTHEROE, M.D., Physician to the Hospital for Women: 42 Park Street, Grosvenor Square, W.

Orig Memb SMITH, THOMAS, Surgeon to, and Lecturer on Clinical Surgery at, St. Bartholomew's Hospital, and Surgeon to the Hospital for Sick Children: 5 Stratford Place, Oxford Street, W. (C. 1869–71.)

1873 SMITH, WILLIAM JOHNSON, Surgeon to the Seamen's Hospital, Greenwich, S.E.

1873 SMITH, WILLIAM WILBERFORCE, M.D.: 2 Eastbourne Terrace, Bishop's Road, W.

1868 SNOW, WILLIAM V., M.D.: Richmond Gardens, Bournemouth.

Orig Memb SOUTHEY, REGINALD, M.D. (C.), Physician to, and Lecturer on Forensic Medicine and Hygiene at, St. Bartholomew's Hospital: 6 Harley Street, Cavendish Square, W. (C. 1867–70, 1876–77, S. 1873–75.)

1876 SQUIRE, BALMANNO, M.B.: 24 Weymouth Street, Portland Place, W.

Orig Memb STEWART, ALEXANDER PATRICK, M.D., Consulting Physician to the Middlesex Hospital: 75 Grosvenor Street, W. (V.P. 1872–74.)

1871 STEWART, WILLIAM EDWARD: 16 Harley Street, Cavendish Square, W.

1874 STIRLING, EDWARD C., M.B.

1872 SUTHERLAND, HENRY, M.D., Lecturer on Insanity, Westminster Hospital: 6 Richmond Terrace, Whitehall, S.W.

1868 SUTRO, SIGISMUND, M.D., Senior Physician to the German Hospital: 37A Finsbury Square, E.C.

Orig Memb SUTTON, HENRY GAWEN, M.B., Physician to, and Lecturer on Medicine at, the London Hospital; and Physician to the City of London Hospital for Diseases of the Chest: 9 Finsbury Square, E.C.

Elected	
1876	Symonds, Horatio P.: 35 Beaumont Street, Oxford.
1868	Tatham, John, M.D., Assistant Physician to the Hospital for Consumption and Diseases of the Chest: 1 Wilton Place, Knightsbridge, S.W.
1875	Taylor, Frederick, M.D., Assistant Physician to Guy's Hospital: 15 St. Thomas's Street, Southwark, S.E.
Orig Memb	Teevan, William F., Surgeon to the West London Hospital: 10 Portman Square, W.
Orig Memb	Thompson, Edmund Symes, M.D., Physician to the Hospital for Consumption and Diseases of the Chest; Gresham Professor of Medicine: 3 Upper George Street, Portman Square, W.
Orig Memb	Thompson, Sir Henry, Knt., Surgeon Extraordinary to H.M. the King of the Belgians; Emeritus Professor of Clinical Surgery in University College: 35 Wimpole Street, W. (C. 1867–8.)
Orig Memb	Thompson, Henry, M.D. (V.P.), Fellow of St. John's College, Cambridge; Senior Physician to the Middlesex Hospital: 53 Queen Anne Street, W. (V.P. 1875.)
1872	Thornton, William Pugin, Surgeon to the Hospital for Diseases of the Throat; Surgeon to the Marylebone Dispensary: 42 Devonshire Street, Portland Place, W.
1876	Thrupp, James Godfrey.
1877	Tibbits, Herbert, F.R.C.P. Ed., Medical Superintendent of the National Hospital for the Paralysed and Epileptic: 30 New Cavendish Street, W.
1874	Travers, William: 2 Phillimore Gardens, Kensington, W.
1868	Venning, Edgcombe (C.), Assistant Surgeon, 1st Life Guards: 87 Sloane Street, S.W. (C. 1876–77.)
1876	Wadham, William, M.D., Physician to, and Lecturer on Medical Jurisprudence, at St. George's Hospital: 14 Park Lane, W.
1868	Wagstaffe, William Warwick, Assistant Surgeon to St. Thomas's Hospital: 2 Palace Road, Albert Embankment, Westminster Bridge, S.E.
1869	Walker, Joseph, Dental Surgeon to the Westminster Hospital: 22 Grosvenor Street, W.
1875	Walsham, William J., Demonstrator of Anatomy and Operative Surgery at St. Bartholomew's Hospital: 27 Weymouth Street, Portland Place, W.
1870	Warwick, Richard Archer, M.D., Surgeon to the Richmond Infirmary: 5 Hill Rise, Richmond, S.W.

ELECTED

1876 WATERS, JOHN H., M.D.: 101 Jermyn Street, St. James's, S.W.

1868 WATKINS, EDWIN T., M.D.: 61 Guilford Street, W.C.

Orig Memb WATSON, WILLIAM SPENCER, M.B., Surgeon to the Royal South London and to the Central London Ophthalmic Hospitals: 7 Henrietta Street, Cavendish Square, W.

Orig Memb WEBER, HERMANN, M.D., Physician to the German Hospital: 10 Grosvenor Street, W. (C. 1867–71, V.P. 1873–5.)

1876 WEIR, ARCHIBALD, M.D., St. Mungho's, Great Malvern.

1869 WELLS, J. SOELBERG, M.D. (C.), Professor of Ophthalmology at King's College; Ophthalmic Surgeon to King's College Hospital; and Surgeon to the Royal London Ophthalmic Hospital, Moorfields: 16 Savile Row, W. (C. 1875–7.)

1868 WELLS, THOMAS SPENCER, Surgeon in Ordinary to H.M.'s Household; Surgeon to the Samaritan Free Hospital: 3 Upper Grosvenor Street, W. (C. 1873.)

1874 WHEELHOUSE, CLAUDIUS GALEN, Senior Surgeon to the Leeds General Infirmary, and Lecturer on Surgery, Leeds Medical School: Hilary Place, Leeds.

1868 WHIPHAM, THOMAS TILLYER, M.B., Physician to St. George's Hospital: 37 Green Street, Grosvenor Square, W.

1874 WHISTLER, W. M., M.D.: 28 Wimpole Street.

1871 WIGHT, GEORGE, M.B., C.M.: 428 Liverpool Road, N.

Orig Memb WILKS, SAMUEL, M.D., F.R.S., Physician to, and Lecturer on Medicine at, Guy's Hospital: 77 Grosvenor Street, W. (C. 1871–2.)

Orig Memb WILLETT, ALFRED, Assistant Surgeon to St. Bartholomew's Hospital: 36 Wimpole Street, W. (C. 1872–5.)

Orig Memb WILLIAMS, CHARLES THEODORE, M.D., (C.) Physician to the Hospital for Consumption and Diseases of the Chest: 47 Upper Brook Street, Grosvenor Square, W. (C. 1877.)

1870 WILLIAMS, WILLIAM RHYS, M.D., Lecturer on Mental Diseases at St. Thomas's Hospital: Bethlehem Royal Hospital, Lambeth Road, S.E.

1876 WILLIAMSON, JAMES MANN, M.D.: Ventnor, Isle of Wight.

Orig Memb WILLIS, FRANCIS, M.D.: Braceborough, Stamford.

ELECTED

1868 WILTSHIRE, ALFRED, M.D., Joint Lecturer on Obstetrics, and Assistant Physician-Accoucheur, St. Mary's Hospital: 57 Wimpole Street, W.

1869 WOLFF, ABRAHAM, Surgeon to the Jews' Deaf and Dumb Home: 48 Gloucester Gardens, Hyde Park, W.

1872 YEO, J. BURNEY, M.D., Physician to King's College Hospital, Assistant Physician to the Brompton Hospital for Consumption: 44 Hertford Street, May Fair, W.

CLINICAL SOCIETY OF LONDON.—BALANCE SHEET 1875–76.

1875		£	s.	d.	1876		£	s.	d.
	To balance from last account . . .	103	10	0		By cost of printing, binding, &c., of Vol. IX. of 'Transactions'	115	2	6
	„ Subscriptions for 1875–76 . . .	194	5	0		„ Royal Medical and Chirurgical Society for use of rooms, &c.	47	5	0
	„ Admission fees from 26 new resident members	54	12	0		" Refreshments and attendance at meetings.	31	10	0
	„ Admission fees from 2 new non-resident members	4	4	0		" Printing, stationery, postage, &c. . .	16	11	4
	„ January dividends on £350 Consols . .	5	4	2		" Collection of subscriptions . . .	9	6	0
	„ July ditto ditto . . .	5	3	9		" Messrs. Longman, commission on sale of 'Transactions,' and cost of advertising .	7	6	1
	„ Mr. Venning, towards cost of plate . .	3	17	6		Balance in Treasurer's hands . . .	164	19	4
	„ Sale of 'Transactions'	21	3	10					
		£392	0	3			£392	0	3

E. HEADLAM GREENHOW, M.D., *Treasurer.*

Audited and found correct { GEORGE H. EVANS, SIDNEY COUPLAND, } *Auditors.*

{ WILLIAM CAYLEY, THOMAS P. PICK, } *Hon. Secs.*

ADDRESS BY THE PRESIDENT,

GEORGE WILLIAM CALLENDER,

F.R.S.

GENTLEMEN,—If an earnest desire to promote the exact observation of clinical facts should largely influence me as a member of this Society, that earnestness should be intensified by the responsibility I have incurred in venturing to accept office as your President—intensified by the knowledge that your friendly judgment has placed me in a position which demands that by precept and example I should plead for precision in clinical research.

If I had only to speak to you in words of thanks my duty would soon be ended, for I can but say that I value most highly the honour you have conferred upon me. In recalling your confidence I shall be encouraged in the endeavour, so far as I can, to do it justice.

It has, however, become a custom of our Society that your Presidents should venture from time to time to offer suggestions as to how the objects we have in view may be best promoted; a custom which it grows more difficult to observe as its novelty wears off; and yet—bearing in mind changes in the grooves of thought and in the method of pursuing investigations, the gradual accumulation of facts tempering and consolidating the knowledge with which we begin each new session of work—one which seems to me most desirable to conserve.

In addresses which have been given from this chair your Presidents, in a practical way and with the force of experience (all the more forcible from the clear and thoughtful words in which it has been spoken), have described the duties we owe to a Society which is founded expressly for 'the cultivation

and promotion of practical medicine and surgery:' words which express as could scarce any other the character and scope of our task, for they foreshadow an increase of knowledge, but, however far in advance of the past, a present knowledge which in its future must always be capable of cultivation and promotion. Our work is, indeed, bounded by an horizon which recedes before us; but, in our pursuit of it, as we ascertain and establish facts, and, so far as we can, as we eliminate sources of fallacy, we shall find that we are making progress and are strengthening our position for a further advance.

If I diverge in any way from the steps of my predecessors, who have spoken chiefly on the manner in which the objects of the Society may best be attained, it will be to take advantage of the experience we have thus far acquired, not only for the evidence which it gives of the extent to which we have acted up to the expectation of our founders, but as showing the direction in which we are being carried and in which our future work promises, I think, to give the best clinical results.

We began by setting up for ourselves a high standard; and if we have not quite attained to it, we can trace through our transactions an honest endeavour to do so, and we can be sure that we have encouraged—I would venture to say we have practically established—a precision and order in the observation of clinical facts which by itself is a substantial gain. If we look away from our more immediate proceedings, and if we remember that those who were interested in the formation of the Society are largely responsible for clinical research in our hospital wards and elsewhere, we shall recognise in every direction that an effort is being made to observe disease and its treatment in a more critical and accurate manner than heretofore. In the treatment of wounds, for example, whatever plan is followed (and many are and have been advocated), all have in common the care which conducts them, and which ensures that every detail shall be scrupulously attended to. If I may single out one fact in illustration of this, I would remind you that, after being present at and taking part in our debate on Pyæmia, Mr. Cadge effected a revolution in the results of the treatment of wounds in the Norwich Hospital, above all things, by seeing that the nursing, the cleansing, and the dressing are strictly and hence successfully directed. I say work is more precise in hospital practice and elsewhere, for in using the latter word I would

recall the fact that there are points, such as those of history and of affinity, and the close watching of disease through the course of many years, which are undoubtedly more fully and more surely elucidated in private than they can be in hospital practice, and I think the Society would gladly welcome the renewal of Reports, as they may be termed, such as those brought before us by Mr. Prescott Hewett, and drawn from such experiences. Let me mention, too, in passing, and with reference to precision of observation, that by close watching of the sick we are constantly gaining information, as it were, in the byeways of practice, not always, it is true, respecting details of essential importance, and yet information which helps, occasionally, to stand us in good service. Of such is the fact that a rapid rise of temperature after, for instance, an operation, may be due to emotional causes of an evanescent, and consequently of a comparatively unimportant, character; and of such is the knowledge of the exact rate of the repair of wounds by which we can tell the time which a given surface will take to heal. Such, too (and I take shame to myself for being unable to speak with certainty on the subject), should be our knowledge respecting the asymmetry of parts, to which attention has recently been directed in America with reference more especially to the length of limbs, a detail which all students of art are aware received attention from the ancient sculptors.

But if medicine and surgery are being cultivated with greater care and precision, can it be added that we are thereby promoting our knowledge of the treatment of disease? I turn, perhaps with an undue bias, to surgery. I find that the careful supervision of operation and other wounds has proved, if rest and cleanliness and constant attention are combined, that the most serious hurts are repaired with an absolute certainty (not merely through a precarious convalescence), injuries being recovered from which some years ago would have been considered irremediable. If erysipelas, despite precautions, attaches itself to a wound, the close watching of the case now enables us to detect the earliest symptom of the disease, and, twelve or twenty-four hours before the outcome of a rash, to commence the treatment of the affection. Pyæmia has been proved to be a preventable disorder. Skin-grafting—to name some of the facts brought more directly under our notice—has been introduced; Esmarch has described to us his plan for operating without loss of blood; the use of torsion as a hæmostatic; that of various antisep-

tics for the dressing of wounds; the subperiosteal resection, and the subcutaneous section of bones; the surgical treatment of aortic aneurism; the removal of tumours by caustics and by the elastic ligature; the surgical treatment of neuralgia and of local paralysis—have been before us, amongst other subjects, for consideration, and surely some of them may be regarded as representing distinct gains to our means of treating surgical affections. In nearly every instance the gain, if any, in treatment has been due to precise observation of the cause and nature of the trouble to be remedied, and to the direction of natural forces for its relief; and, as in most instances of real progress, the means used for controlling these forces, when put before us, are found to be of the most simple kind.

Precise observations of the conditions which cause disease must always be a subject of great importance for clinical research. In this direction the study of material pathology to a certain point has been cultivated with success. There are probably no facts of greater practical moment than are such, for example, as taught us the connection between rheumatic fever and various changes in the covering and lining of the heart, or those which throw light upon that form of embolism which results from the setting free into the circulation of small particles of fibrin. But there are inquiries beyond those which are satisfied by the examination of diseased structures, those which reach to the causes of disease—inquiries which, amongst others, come within our province where we join hands with pathology in its experimental researches. Why, for instance, should such a degeneration of tissue arise as occurs when cancer is developed, and why should such degenerate cancer exhibit active growth, or what are the causes which determine the presence of tubercle? No higher duty can be ours than that which leads our inquiries in this direction, for of such causes at this time what do we really know? And how can we look (discuss each malady how we may) for any better treatment of these diseased conditions (save such as comes to us by hazard) until we have learnt more about the causes of those errors of nutrition which in all probability lie at the seat of the mischief? By inquiries, too, directed to the causes of disease we may expect to advance in our knowledge of that best of treatment—the preventive—the controlling of the forces of nature so that disease may be avoided.

There is also good work to be done by the study of the

natural history of disease, a part of our programme which will, I trust, be attended to in our future as fairly as, perhaps even more thoroughly than, in our past proceedings. This study is in truth that of disease as observed under the most careful supervision, with rigid exclusion of complications from preventable external influences, that is, free from errors of management—all, in a word, that due watching, rest, cleanliness, temperature, and suitable nourishment can do, and seeing (so far as we can without risk to the patient) how disease comports itself under such conditions,—clearing, in fact, the ground for precise observations of the medicinal action of drugs, and for gauging their exact effects.

And this it is which must always be the great feature in our prospective work—the attainment of that knowledge of therapeutics of which, one of our Presidents told us, as a trustworthy science, we have only the expectation, and of which he also said that he often wondered how vaguely, how ignorantly, how rashly drugs are often prescribed. I am far from saying that the Society might not have done more with reference to the study of the action of drugs, and yet our 'Transactions' are not barren of laudable endeavours to obtain more knowledge of their influence upon disease. If it is a lesser function to discharge we have at least sifted the reputed powers of various medicines, and have reported them as untrustworthy, and such inquiries have been illustrated by valuable experiences and have led to interesting discussions. We may remember, indeed, that to this Society we owe the introduction of a discussion extending over several meetings, and setting an example which has been elsewhere followed; and if it has not been so here it is because it is in the nature of the ordinary work of the Society that the subjects brought forward at its meetings should be freely discussed; and interesting as have been many of our communications, they have often been supplemented by most valuable comments from those who have spoken upon the subjects which they illustrate.

But our 'Transactions' show a long list of trials carefully conducted to test the action of various remedies. Amongst such may be mentioned, notes on the local effects of opium upon the bladder; the influence of ipecacuanha upon diarrhœa; the value of quinine in pyrexia; the use of salicylic acid and of other antiseptics; the employment of copaiba in ascites; the local effect of the hypodermic injection of strychnia; the use of bromide of potassium in epilepsy, of nitrite of

amyl in angina pectoris; the action of iodide of potassium upon tumours; the employment of salicylic acid in rheumatism, cold affusion in rheumatism, and cold baths for pyrexia in phthisis. If, then, we may not have attained to much, I think these examples—and others might be added—show that an attempt is being made to investigate the action of drugs.

When we reflect upon the difficulties inseparable from the work we profess—work which is strictly limited to the record of facts, and of which mere opinions form no part; when we consider the varied phases of disease and the variable soil in which it acts, it is clear that it can only be by slow degrees that we shall attain to any fulness of knowledge of the means for combating disorders by the use of medicines. Were it not for the encouragement given by the facts thus far ascertained, which prove the influence over disease of certain remedies, and the potent action of drugs upon the healthy organs and tissues of the body, we should, I fear, be disheartened by the cloud of difficulties with which an empirical system, continued through ages, has been allowed to envelope the relations between disease and remedies for its cure. It is to remove this—to base our treatment upon facts—that we are trying to make therapeutics not an expectation but a trustworthy science. If I may point to an example of the system on which each one of us should work, I would instance the recent appointment by the Council of committees for collecting on definite subjects an array of facts from which definite conclusions will be drawn. We can each individually cast our work in a similar mould. It must be precise, and it must be matter-of-fact. In this spirit we must try to learn more about the causes of disease, and we shall have a better knowledge of preventive treatment. We must endeavour to learn more about the action of drugs, and we shall know better how to cure disease. Even now there is so much of which we are ignorant, and the field of inquiry is still so vast, that there can be no question as to any dearth of material upon which to energise our work. That work must indeed have led to an infinite advance beyond our present knowledge of the art of healing before the time shall come when we may slacken in our efforts for the cultivation and promotion of practical medicine and surgery.

BOSTON MEDICAL LIBRARY ASSOCIATION.

COMMUNICATIONS.

I.—*Case of Intestinal Obstruction caused by Tubercular Peritonitis.* By CHRISTOPHER WOLSTON, M.D. *Read October* 13, 1876. *Communicated by* C. F. MAUNDER.

THE case that I have the pleasure of bringing before you, at the suggestion of Dr. Sutton and Mr. Maunder, who saw it in consultation with me, is one of intestinal occlusion, dependent upon a cause of which there was nothing to give any suspicion, either in the history of the case or the symptoms that presented themselves during the lengthened course it ran.

The case is mainly interesting as showing upon what remote and occult causes intestinal occlusion may depend, and with what caution any surgical interference should be recommended.

The patient was a young lady æt. 25, and somewhat mentally deficient, though quite capable of expressing all her sensations and wants. Up to the time of this illness she was considered by her friends to be in robust health, and had never been seriously ill in any way. The only thing in the way of ailment that could be recollected was that when about ten years old she complained of pain in the left hypochrondrium, which continued off and on for some years. For the last ten years, as far as her friends could recollect, there had been no complaint of pain anywhere, but they had noticed from the time she first complained of pain that she began to stoop and to limp in walking. This limping had become much worse just before her illness.

On the afternoon of February 20, having appeared perfectly well in the morning, she complained of headache, and, in the evening, sickness, with slight pain in the bowels, came

on. During the next few days she seemed better, but the sickness, with colicky pain and more or less of constipation, returned and continued off and on till Friday, March 3, at which date I was called in. The patient was stated to be suffering from a slight attack of gastric fever.

I will now take up the case from my own note-book. The tongue was coated white at the back, but clean and red at the tip and edges. Urine thick and high-coloured. Bowels constipated; face apathetic, but with no expression of distress or anxiety. The abdomen was very tympanitic, but there was no tumour to be detected anywhere, and there was no pain or tenderness on pressure. The catamenia were two months over-due. There was no headache or fever-flush on the face. Temp. 99·5°; pulse 80. There had been no sickness or pain that day and the bowels had been slightly moved the day before. The history of the case and the great tympanitis led me at once to suspect some abdominal obstruction. I directed nothing to be given but a little milk and water to allay thirst, the abdomen to be well fomented, and a copious enema to be administered.

March 4.—Had passed a restless night, with a good deal of pain coming on in paroxysms, but no sickness. The tongue was more coated. There was no pain or tenderness on pressure, but the tympanitis had increased. Urine had been passed freely, but no action of the bowels. Pulse 80; temp. 90°. I directed another water enema, with some castor-oil and turpentine in it, to be administered. This freely opened the bowels, but was followed by extreme pain and sickness. In the evening a similar enema was given, and a small motion was the result.

March 5.—Much pain and sickness during the night, which continued through the day, nothing being retained on the stomach. Another water enema was administered which had the effect of quite emptying the lower bowel, but with no relief to the tympanitis. Other symptoms much as the day before.

March 6.—A good deal worse. Much pain and sickness. Vomited matters decidedly stercoraceous. Abdominal distension extreme. A large enema brought away nothing with it. Pulse 100; temp. 99·5°. I passed an œsophageal tube well up the rectum and injected three quarts or more of tepid water, till the abdominal distension became extreme, but without any satisfactory result. (In the course of treatment this was done several times.) Nutritive enemata, containing

two eggs, half a pint of milk and beef-tea thickened with arrowroot, a dessert spoonful of brandy and fifteen drops of opium to be administered every three hours, and ice dipped in brandy to be given freely by the mouth.

March 7.—Had passed an easier night—less pain, with several hours of sleep. Some vomiting and hiccough. Tympanitis extreme. Pulse 100; full and firm. Tongue cleaner. Urine passed freely, and normal in character.

In the afternoon she was seen by Dr. Sutton, who confirmed the diagnosis as to intestinal occlusion, and probably from a band over which the intestine had twisted. He advised no change of treatment, and unless symptoms became much graver no surgical interference.

March 8.—Had passed a good night, without pain or sickness. Slept a good deal. Some hiccough. Flatus had passed freely, and the abdominal tension was less. Occlusion plainly not complete. Pulse 82. Tongue cleaner. Treatment the same, and the lower bowel to be well washed out once in twenty-four hours with tepid water and a little turpentine.

March 9.—No pain or sickness during the night; slept well between the enemata, which were all well retained. Less hiccough. Tympanitis increased. No flatus passed since yesterday. I manipulated the bowels thoroughly; inverted her and shook her well, but without any result.

March 10.—Good night. Tongue clean. Bowels softer. Some flatus passed. No sickness or pain. Urine free and normal. Bowels very distended and depressed beneath the umbilicus, as if held down by something inside. Pulse 82; temp. 99°. No tenderness on pressure.

March 11.—During the night had several severe paroxysms of pain, relieved by increasing the amount of opium in the enemata. Very great tympanitis. Pulse 86; temp. 99°. I punctured the bowels with a small trocar, but without much relief. In the afternoon she was seen by Mr. Maunder, who confirmed the diagnosis as to the probable cause of the occlusion, and who deprecated anything like operation in her present condition, but put her under chloroform; well kneaded the abdomen, inverted her, and shook the bowels well about. Some flatus was passed during the procedure, but no other effect was produced.

March 12.—Severe pain and sickness during the night; in other respects no change. Pulse 82.

March 13 to 20.—During this period there was little change. The pulse remained about 80, and the tongue kept

clean. Sickness was pretty constant, but very little pain, easily relieved by hot fomentations and rubbing; a good deal of flatus was passed at times, and now and then the abdomen was softer and less swollen. By the mouth ice and iced brandy-and-water were taken. The other treatment as before.

March 21.—Not so well. Pulse 90; tongue not so clean. Bowels very distended. Ice be to kept constantly applied over the abdomen, and calomel, dry, on the tongue.

March 24.—About the same. A good deal of flatus had passed, but no change in the condition of the abdomen. Emaciation beginning to be very marked. To take some tincture of nux vomica every three hours with the iced brandy-and-water.

March 27.—Not so well. Abdomen more swollen; much sickness and more pain. Pulse 90.

March 28.—Much sickness and pain. Pulse 90, but tongue c'eaner. Applied galvanism over the abdominal parietes, and also with one pole to the tongue and the other to the anus. The intestines were thoroughly aroused to action, but without any result. This treatment was tried several times a day till March 30. Pulse 80. Tongue clean and bowels softer. Flatus passed freely. Mr. Maunder having suggested by letter that a more decided effort to get the bowels to act should be made during the next two days, the watery extract of aloes was tried, but only resulted in more pain and sickness.

April 3.—About the same. Tried podophyllum, without any effect. Directed the body to be rubbed all over with olive-oil twice a day, and some quinine to be added to each nutritive enema.

April 7.—About the same. Tongue clean. Pulse 86; temp. 99. Ordered a pill containing one drop of croton oil to be taken on alternate days.

April 10.—Much sickness and pain in bowels after taking the pills. Tongue clean. Pulse 100 and feeble; temp. 99·6°. The quantity of brandy in each enema to be doubled.

April 13.—Very weak and low. Wasting rapidly. Pulse 100. Constant sickness, but no pain; a good deal of flatus passing. The bowels to be rubbed well with castor-oil.

April 14.—After having the bowels rubbed with castor-oil, followed by a copious water enema, containing a table-spoonful of turpentine, large quantities of flatus passed, and the bowels became quite flat. Subsequently a copious stool of dark fluid feculent matter passed. Could feel no

tumour, and there was no tenderness on pressure. To take some iced milk and beef-tea. Pulse 100; temp. 99·8°.

April 15.—Much pain last night, relieved by opium in the enemata. Much vomiting, the sickness having been increased by the food. Urine high-coloured and rather scanty. Abdomen quite flat, and small stools have passed.

April 16.—Sickness continues, but no pain. Abdomen keeps flat, much flatus passing. Pulse 100. Urine very high-coloured. Has a strange look about the eyes. Face flushed, but no headache. The redness of the face uniform, and not of a hectic character.

April 19.—No sickness. Face more flushed, sight dim, and there is slight strabismus. Complains of noises in the ears (the effect of quinine?). Pulse 120.

April 21.—No sickness since yesterday, and has kept down bread and milk diet, with raw beef in champagne, well iced. Pulse 130. Is weak and slow. Much flatus has passed, and a small stool. Died somewhat suddenly and unexpectedly the same evening, with the following symptoms, as given by her friends:—

'On Friday last she was as when you left her, until about 7 P.M., when her face suddenly became covered with perspiration, which continued until about an hour before her death, and she complained greatly of the noise in her ears. About 8 the joints of her right hand turned quite back, and it was with difficulty they were put in their place again. The other hand was icy cold, but not drawn. Her eyes were half-closed, showing only the whites, and the pupils showed they were crossed. We put hot-water bottles to her hands and feet, and rubbed her with brandy. The only pain she complained of was in her left foot. Her breathing was very difficult from seven o'clock. She was conscious to the last, and died without any struggling. She spoke plainly and coherently a few minutes before her death.'

The post-mortem examination took place the next day, Mr. Maunder and Mr. Kyngdon being present.

On opening the abdomen the intestines, moderately distended with flatus, presented an appearance as if they had been thickly scattered over with boiled sago, and on closer examination this was found to be a tubercular deposit, which extended throughout their entire length. Many of the deposits were as large as beans, looking like yellowish-white nodules on the surface of the gut, but being deposited really in the substance of the peritoneal covering. They were most

extensively distributed in the neighbourhood of the cæcum, above and below it. The intestines were adherent to the peritoneum in many places, especially to the sides of the pelvis and before and behind, below the umbilicus; the adhesions being so placed as to well account for the depression noticed beneath the umbilicus at the times of extreme distension of the abdomen by flatus. They were also much glued together and puckered up by adhesions, so that it was with much difficulty they could be removed and properly examined. Complete occlusion was nowhere found, but they were tightly constricted in many places, so that their fluid contents were contained in a succession of pouches. The internal lining of the intestines seemed healthy throughout. There were no signs of recent inflammatory action, or appearance of recently thrown-out lymph, all the adhesions being old and firm. Here and there the peritoneum and intestines, especially the jejunum, were slightly reddened and congested, and it was plain that, while the constrictions had been relieved sufficiently to allow flatus to pass freely away from end to end, only the lower portions of the ileum had allowed their semi-fluid contents to pass on, and this would account for the sickness continuing after the abdomen had flattened and flatus and fæces freely passed.

The examination, I regret to say, was rather hurriedly performed; and being satisfied as to the cause of the intestinal occlusion, we did not examine the lungs and brain to see if there was tubercular deposit in them. One thing was made very plain, and that was, that any surgical interference would only have hastened the fatal termination.

I would add that emaciation was not extreme, and there was no clubbing of the finger-ends, and during life not the slightest sign of irritation in the lungs ever manifested itself. In thinking back over the case I believe that had we examined the brain and medulla we should have found some lesion there, that would have accounted for the symptoms that developed themselves at the close, and were the immediate cause of death.

II.—*Sequel to a Case of Gastro-Enterotomy (artificial Anus in the Small Intestine).* By CHARLES F. MAUNDER. *Read October* 13, 1877.

IN the last volume of the Transactions will be found the report of the above case up to the time when the patient, who had been submitted to operation in November, 1875, was very comfortable. His general health had improved, and he was able to enjoy a good two hours' walk daily. The hard lumps which Mr. Gordon Brown had detected in the abdomen steadily increased in size; the appetite gradually fell off, and solid food became distasteful. Hiccough ensued, and week by week he became more feeble. The artificial anus which I had made in the right iliac region in the small intestine continued healthy and adequate. To avoid inconvenience arising from the irregular action of the bowels through the artificial anus, Mr. Gordon Brown advised his patient to use a half-pint water enema daily. By this means he was able to clear his bowels before leaving his room in the morning, and had no further trouble. He wore a sponge tent, which acted as a plug, and, at the same time, kept the orifice open. His death appeared to result from exhaustion consequent on inability to take sufficient nourishment, and was most peaceful, seven months subsequent to operation.

I think I am entitled to say that the operation was eminently successful, inasmuch as it prolonged for seven months a life that threatened to become extinct in forty-eight hours.

The patient was 68 years of age, gouty, and with a feeble circulation.

Much to our annoyance a post-mortem examination was obstinately refused.

III.—*A Case of Traumatic Stricture with numerous Penile Fistulæ cured by Dr. Otis' operation.* By W. F. TEEVAN. *Read October* 13, 1876.

JAMES P., a sailor, æt. 45, living at Padstow, Cornwall, was admitted into St. Peter's Hospital on September 18, 1875, having been put under my care by Mr. Marley, of Padstow.

History.—The patient stated that when serving on board

a ship in the Black Sea, in 1854, he was sent aloft to reef a sail, and whilst executing the order he slipped and fell astride one of the yards. In one hour's time the perineum and scrotum had swollen to a great size. Three days afterwards an abscess formed in the perineum, and after it burst he passed all his urine through the opening. Three years later several abscesses formed and burst, leaving more fistulæ. In course of time the fistulæ in the scrotum healed, but the urine continued to pass through those in front. He never had syphilis or gonorrhœa.

Condition on Admission.—The patient was very thin, and had the aspect of one who had undergone great privation. He was not, however, of unhealthy appearance. The scrotum was puckered and firmly adherent to the corpus spongiosum; the penile urethra felt as if it contained a metal catheter, as the corpus spongiosum was so thickened and indurated. There had been, in all, sixteen fistulæ, but those in the scrotum, eleven in number, were closed. The remaining five fistulæ were placed along the under surface of the penis, and the skin surrounding them was glazed, thickened, and firmly adherent to the parts beneath. The patient was the subject of hypospadias. No catheter could be passed into the bladder, but I managed to introduce a fine olivary whalebone bougie.

Treatment.—By a combination of continuous and gradual dilatation I was enabled by October 26 to pass No. 18 (Charrière) olivary catheter. I was then brought to a standstill, for any attempt to introduce a larger instrument was followed by orchitis. I accordingly taught the patient to draw off all his urine with a No. 16 olivary catheter, and he soon became an adept in the practice. The man had great pluck and patience; the passage of the catheter caused no annoyance, and he zealously and faithfully carried out my instructions. By November 22 two of the fistulæ were closed; but as a week later no further progress had been made, I began to touch the openings every other day with a heated wire. By December 9 I managed to close two of them, and thought I had nearly shut up the last one which remained opened. As the application of the heated wire caused much irritation of the testicles, I for the future used probes coated with the nitrate of silver. By January 1, 1876, I found as the result of the various methods of treatment which I had adopted that I could not get all the fistulæ to close. If I succeeded in shutting No. 5, I found out that No. 1 opened up again. I

then came to the conclusion that the fistulæ were kept open by the narrowed condition of the injured portion of the canal not allowing the urine to escape quickly enough, causing the tube to be distended with great force and driving the urine through the openings. I thought if the obstruction to a rapid exit of the urine were removed there would be but little pressure exercised by the water, and that the openings would close of their own accord.

Accordingly, having ascertained that the calibre of the urethra in front of the stricture was 31 millimetres, I divided the contraction with Dr. Otis' urethrotome on January 6, and passed No. 31 metal bougie easily into the bladder. No catheter was left in, nor was the urine drawn off.

On January 15, nine days after the operation, all the fistulæ were closed. The patient left the hospital on January 25, with instructions to pass his No. 23 catheter once a month. On February 16 Mr. Marley wrote to me, saying the patient was quite watertight and able to pass his catheter with ease.

Remarks.—The points of interest in the case were: 1. That the stricture, being traumatic, was necessarily most difficult to treat. 2. The existence of the fistulæ for the long period of 21 years. 3. The situation of the fistulæ; it being well known that fistulæ situated in the penile portion of the urethra are the most difficult of cure. 4. The failure of four different methods of treatment: *a.* Dilatation. *b.* Retaining a catheter. *c.* The patient drawing off his urine. *d.* The application of heated wire and probes tipped with nitrate of silver. 5. The fact that the fistulæ were all permanently closed by carrying out the principles enunciated by Dr. Otis, *i.e.*, the restoration of the strictured urethra to its normal calibre. So far as I can judge it seems to me that his operation is only called for by a very few cases of stricture, and it struck me that the case I have related was just one of those in which his operation was eligible.*

IV.—*Case of Hydatid of Orbit.* By C. Higgens. *Read October* 13, 1876.

ALICE S., æt. 14, came to me February 1, 1876. She has always been delicate, has scars of abscesses in neck of five years' date, others more recent.

[1] July 19, 1877.—The patient's urethra still remains quite watertight.

A month ago began to have pain in right eyeball, since which the globe has begun to protrude. Eyeball is pushed downwards and somewhat protruded; movement upwards nil, in other directions perfect; diplopia when looking upwards only; reads Snellen X.; optic disc red, greatly swollen, and bulging into vitreous; veins of retina distended and tortuous, arteries of about normal calibre.

No pulsation in or about orbit, no bruit, very little pain.

Probably some growth situated between eyeball and superior rectus and pressing upon optic nerve.

Feb. 14.—Two days ago eye became rather suddenly inflamed and painful; there was no shivering.

There is now considerable swelling of the upper lid, œdema of conjunctiva, impairment of mobility of globe in all directions; no constitutional disturbance.

Abscess was suspected. An incision was made through conjunctiva beneath upper lid; a director passed through it into orbit came in contact with firm resisting substance, which was incised with narrow-bladed knife; only blood escaped.

Feb. 28.—Protrusion has increased. I made an incision through soft parts from near inner angle of orbit to beyond outer angle and came down upon lachrymal gland pushed forward. This I removed. I then came upon firm resisting growth, which I dissected or rather tore away with finger and handle of scalpel from parts around.

Growth appeared to be intimately connected with one of the ocular muscles (superior rectus?); muscle had to be divided.

On making a rather strong effort to detach growth with the finger it collapsed, but no escape of fluid was noticed; there was, however, free hæmorrhage going on at the time. Collapsed remains of tumour removed by separating it from parts around with finger; it was found to extend quite back to the apex of the orbit and came into contact with the optic nerve.

After removal growth was found to be an extremely thick-walled cyst; it had ruptured through a wound made by the knife.

The wound in skin was closed with a few fine sutures, the margins of the lids pared and united, so as to preserve the eyeball, which had escaped uninjured, from any subsequent damage which might result from exposure.

On more careful examination the growth was found to be made up of an outer and extremely thick-walled cyst, com-

posed of inflammatory tissue; a portion of muscle adhered intimately to the cyst and could not be separated. Within this external envelope was a thin pellucid cyst, which separated easily, and was found to be composed of a membrane which presented the parallel, finely serrated markings characteristic of hydatids; there were no hooklets.

The whole cyst was nearly as large as the eyeball, but its cavity, owing to the great thickness of the external envelope, was small.

Feb. 29.—Eyelids a good deal swollen, incision healing by primary union; a suture removed from near extremity; some blood and pus escaped; a good deal of constitutional disturbance; wound to be poulticed.

March 6.—Incision is firmly healed except at outer extremity; eyeball can be seen through gap in union of lids at inner canthus; appears to be quite sound; counts fingers.

August 4.—Union between lids divided; upper lid droops, there is total inability to raise it. When lids are held open the eye reads Snellen $1\frac{1}{2}$.

The ophthalmoscope shows the fundus to be quite healthy, the swelling of the optic disc having entirely subsided; the eye deviates downwards, and cannot be directed upwards.

Oct. 2.—A portion of skin and orbicularis muscle removed from upper lid; inferior rectus divided.

Oct. 16.—Can raise lid so as to expose about two-thirds of cornea; eye deviates somewhat downwards and outwards $v = \frac{20}{50}$; can read Snellen $1\frac{1}{2}$.

V.—*A Remarkable Case of Gall Stones, in which the advisability of an Operation for the removal of the Stones was raised.* By Frederick H. Daly, M.D. *Read October* 23, 1876. *Communicated by* C. F. Maunder.

IN July 1874 Mrs. R., æt. 38 years, sent for me to visit her immediately, as she was in violent pain. I was just starting for my holiday; so my partner, Dr. Long, took charge of the case. He readily diagnosed that the severe pain from which the lady was suffering arose from gall-stones. In some hours she became intensely jaundiced, her urine contained a quantity of bile, and she passed white motions. During three weeks she suffered greatly, some days being very yellow, the urine full of bile, and passing a number of

relaxed white motions, the pain being from time to time intense; then these symptoms would all leave for a day or two, only again to return. No gall-stone, however, could be discovered in the evacuations, although most carefully searched for. Dr. Herbert Davies saw the case during this period with my partner, and fully confirmed the opinion as to gall-stones. The treatment consisted of opium, to relieve the pain, and an alkaline mixture.

I saw the lady early in August, and found her improving; but three days after my return she had the most severe attack of hepatic colic I had ever witnessed. I gave her a grain of opium every hour for several hours, and also a quarter of a grain of morphia hypodermically, but the latter caused rather alarming faintness, and she said it gave her 'a feeling at her heart as if she were dying,' and she would not have the injection repeated; so, as the pain became intolerable, I put her under chlorofrom, giving her more than an ounce of the anæsthetic. From this attack she soon recovered, but I could find no gall-stone, although every motion was watched. She subsequently went in the country, but while there had a return of all the symptoms, and came back to London. She continued now to have an attack regularly every fortnight, and I have never seen anybody suffer such severe pain—at one hour of the day she would be perfectly well, and suddenly the pain would come on, followed in a few hours by jaundice, urine loaded with bile, and white motions. Diarrhœa was also now a very frequent symptom, and was very little relieved by treatment. I gave bismuth, creosote, pulv. kino. co., ext. belæ. liquid, and acids with opium, but it seemed to be very little if at all checked by the treatment. I examined the rectum, but found no disease there. In some attacks she took as much as ten grains of opium during one day; she persisted in refusing to have the morphia hypodermically. Chloroform I gave her occasionally, but it caused distressing sickness. She took a good deal of stimulants during the attacks, chiefly champagne and brandy.

This state continuing without any change for the better, but rather an increase in the severity of the attacks, if possible, I met Dr. Murchison in consultation on October 18. He agreed as to the diagnosis and treatment, but advised a more strict search for gall-stones, suggesting that the evacuations should be passed through a muslin sieve. This was done, but still no gall-stone was discovered. There could be

no reasonable doubt as to the diagnosis; there was no symptom wanting. Every twelve or fourteen days she now had an attack, requiring as much as fifteen grains of opium, besides chloral hydrate in large doses, to subdue the intolerable pain. In the beginning of 1875 I thought on several occasions I could feel the distended gall-bladder below the ribs, containig an large gall-stone. Dr. Murchison again saw the lady with me in April, and she was at the time labouring under an attack. Dr. Murchison gave her half a grain of morphia hypodermically, and it acted like a charm, all pain ceasing in a few minutes. Dr. Murchison also thought, with me, that he could feel a stone in the distended gall-bladder, and his view was, that she must be suffering from a large stone, too big to pass. He took a very unfavourable view of the case. If she only had one or more stones, too large to pass, it at once explained why I had been unable to find any gall-stones in the motions after the different attacks. Dr. Murchison advised the morphia hypodermically, and to take a mixture containing carbonate of soda and spirits of chloroform, occasionally also to give a little tincture of nux vomica or quinine. She now readily had the morphia injected, and could not bear the slightest delay in having it used when the attack came on; half a grain soon became of no use, and had to be increased to a grain, and this repeated twice or three times during twelve or fourteen hours, which was the usual duration of a bad attack.

As soon as the biliary colic was relieved by the morphia she was wonderfully well, and ate fairly; the jaundice would disappear most rapidly, and the motions from being like chalk-and-water would become almost black with bile, while the urine, which was before the colour of rum, would soon be quite pale.

About this time some friends advised my patient to try a decoction of herbs, which Dr. Anderson, of Richmond, had found beneficial in some cases of gall-stone, which had resisted the treatment of some leading physicians in London. Dr. Anderson saw the lady with me, and kindly explained the decoction, and also how the prescription of it came into his hands. We tried the treatment for months; and, although, curiously enough, she had no attack for the first few weeks, yet this had happened before, and I believe the herb prescription was altogether useless.

After some months she discontinued it, as the attacks became just as usual. Occasionally now she would have two

attacks during one week, and frequently required the morphia injected twice the same night. My partner, Dr. Gibbings, at this period of the case relieved me of part of the attendance, and he frequently injected hypodermically as much as six grains of morphia during an attack; increasing the dose to a grain and a quarter each injection.

My patient was a lady of great intelligence, and was well acquainted with the nature of her disease, having carefully herself read up the subject, and she expressed a strong wish to see a hospital surgeon, as to whether there was any possibility of removing the stone by operation. I mentioned the matter to Mr. Maunder, and he promised that he would think the case over and let me know. He wrote to me, saying that he saw no reason, having regard to the sufferings of the lady, if she fully understood the great risk, and her husband and family were willing, why it may not be justifiable (after the manner of gastro-enterotomy), to cut down on the gall-bladder, and secure it to the side; then, after adhesion had taken place, open the bladder and remove the gall-stone. Mr. Maunder saw the lady with me in October; and having most fairly put the case before her in its most unfavourable aspect as regards an operation, he carefully examined the hepatic region, but failed to feel any stone, or to trace the gall-bladder. We placed the patient in every favourable position, but neither of us could feel anything unusual. Mr. Maunder therefore declined to operate, unless he could *himself* feel the stone; but if he could, during an attack, satisfy himself that he felt a stone, as I had done, he was prepared to operate. I may remark that I was never able after this to feel the stone, and I think the shrivelling and contracted state of the gall-bladder, as found *post mortem*, affords a complete explanation of this. The progress of the case now became rapid; she began to lose flesh, and did not rally between each attack of biliary colic, and could not bear the pain as she had done. On Christmas Day I had to increase the morphia injection to a grain and a half, and to give her seven grains and a half hypodermically during the twenty-four hours. Her shrieks could be heard in the street until the pain became subdued by the morphia, and more than once she hinted that she feared her own violence during the dreadful agony of an attack. In the beginning of January 1876 her aspect became very suspicious of malignant disease; her mouth also became aphthous, and her power of taking food failed her. It is as well that I

should here remark that during her whole illness I frequently took her temperature, and generally it was normal; but two or three times during the progress of her case she had an attack of ephemeral febricula, her temperature being for a day as high as 104°, but she had *not* an attack of this kind after Christmas 1875.

Her last attack of biliary colic was on January 11, and she was very much shaken by it; the aphthous state of her mouth also got worse, and nothing relieved it. I tried borax and tannin, as local applications, and chlorate of potash, with acid-hydrochlor. dil. internally, without the slightest benefit. She now lived on oysters, eggs, jelly, and a little milk with farinaceous food, together with stimulants, brandy, port wine, and champagne; beef-tea and all soups she was tired of. Occasionally for days she would lie almost pulseless, and then again rally. Dr. Hilton Fagge saw her in consultation with me on March 6, but he was unable to suggest anything further than the acid and the borax. Dr. Hilton Fagge tried most carefully, but failed, to feel anything like a gall-stone, or to make out the gall-bladder.

She continued deeply jaundiced, and had been so since the end of December. There was no sign of elevation of temperature; her urine was full of bile, and there was bile in her motions; she complained of no pain, except from the state of her mouth. On April 1 a swelling was noticed immediately below the margin of the ribs, on the right side, corresponding with the edge of the liver; it distinctly fluctuated, and next day was much larger. She was most anxious that the abscess should be opened; and although she was nearly pulseless, and looked moribund, I aspirated the swelling, and removed about fourteen ounces of most stinking pus. Next day she rallied a little, but was still unable to swallow any food, and the abscess was nearly full again. She now gradually sank, and died on April 5, at four o'clock in the afternoon.

At the post-mortem, made 48 hours after death, Dr. Hilton Fagge was present, and most kindly gave us the benefit of his extensive experience. The abdomen and thorax only were examined. The body was extremely emaciated, and intensely jaundiced.

The liver and adjacent structures were removed *en masse*, in order the more carefully to examine the liver and gall-bladder. The gall-bladder was closely adherent to the under

surface of the liver, and at first sight bore a strong resemblance to a nodule of cancer. On cutting into it it was found tightly contracted round, and closely united to, a globular stone three-quarters of an inch in diameter, and having two facets; so firm, indeed, were the adhesions, that the shrivelled remains of the gall-bladder could only with difficulty be picked off with the knife. The cystic duct was of about the natural size; the hepatic duct dilated to nearly the size of a thumb. The common duct was also enormously dilated, and contained a stone rather larger than that in the gall-bladder, and having a certain range of movement.

On cutting into the substance of the liver the mouths of several enlarged bile-ducts were seen. Besides these, and especially towards the inferior portion of the right lobe, were numerous small abscesses, evidently of *not* very recent origin, having tolerably thick and well-defined cyst walls. No communication could be traced between these and the bile-ducts. Dr. Hilton Fagge estimated that there must have been more than thirty of these small abscesses. Occupying the inferior margin of the liver, and covered externally by only a thin layer of hepatic substance, was a large abscess, containing several ounces of fœtid pus.

The kidneys were healthy; there was no trace anywhere of malignant disease, but a few nodules of obsolescent tubercle were found at the apex of the left lung.

VI.—*A Case of Empyema, in which washing out the Pleural Cavity was followed by Convulsions and Death.*

By William Cayley, M.D. *Read October* 23, 1876.

STEPHAN P., æt. 36, was admitted into the Middlesex Hospital under my care on September 22, 1875. The patient was a Pole, of Jewish descent, highly educated, and of great intelligence. His previous health had been very good. About five weeks ago he caught cold, and was attacked by cutting pains on the right side of the chest, accompanied by shivering and fever; these symptoms were followed by increasing dyspnœa and a short cough, but he did not take to his bed till a week before his admission. The practitioner whom he then called in applied a large blister to the right side of his chest, which caused severe strangury, but did not relieve his symptoms.

On admission the patient, who was fairly well nourished and of good muscular development, was suffering from severe dyspnœa. He was unable to lie down except partially on the right side, and complained much of a severe stabbing pain in the epigastrium. Pulse was 110; resp. 56, shallow and catching; temp. 101·8°; tongue coated but moist; countenance anxious. There was absolute dulness on percussion over the right side of the chest, below the second rib in front and the spine of the scapula behind. Over the dull space the breathing was distant and tubular, and the vocal vibration diminished. At the back of the chest ægophony was audible. The heart was displaced somewhat to the left, and the lower border of the liver depressed 2½ inches below the costal cartilages. The skin over the lower part of the chest was inflamed and infiltrated from the effects of a large blister. The urine was free from albumen.

He was ordered a mixture of iodide of potassium, nitrous ether, and acetate of ammonia, and his side was poulticed. He passed the next two days in a condition of much distress; the dyspnœa, especially at night, was at times alarmingly severe. His temperature varied from 101° to 103°, his respiration from 48 to 60.

On September 25 a trocar was introduced into the pleural cavity, a little below the angle of the right scapula, and by means of the bell-jar aspirator 23 fluid ounces of turbid serum, which was all that could be got to flow, were drawn off. This at once gave great relief, and he passed the next two or three days in comparative comfort, but his respiration continued frequent, and his temperature high, from 101° to 102°.

After the operation the back of the chest became resonant, except quite at the base, but in front and in the axilla the percussion continued absolutely dull below the level of the third rib. It was thus evident that the fluid in the pleura was contained in different cavities shut off from one another, and that only one of them had been tapped.

On the 29th the dulness at the back had considerably increased in extent, and the dyspnœa was worse. A trocar was now introduced very near the seat of the former puncture, and 5 fluid ounces of bloody serum drawn off. This had no effect in diminishing the dulness in front; it was, therefore, again introduced between the fifth and sixth ribs, just outside the vertical mammary line, and the same amount

of fluid withdrawn. The patient expressed himself much relieved.

The chest was now resonant in front, with a tympanitic note, down to the level of the nipple, below which level there was absolute dulness, both in front and in the axilla, together with absence of breath-sounds. Over the back there was tympanitic resonance down to the middle of the scapular region; below this the resonance was impaired, and at the extreme base there was absolute dulness. The breath-sounds could be heard quite down to the base, but were rather feeble and tubular. There appeared, therefore, to be still a collection of fluid shut off in the lower axillary region of the chest; but as all the urgent symptoms were relieved I determined to wait before doing anything further.

During the next week the patient's condition got worse; he still suffered from dyspnœa, was harassed by a short cough, had febrile exacerbations at night, his temperature varying from normal to 101°; he was unable to eat, and was evidently losing flesh and strength. The physical signs remained much the same, but over the back crepitation became audible.

On October 7 a trocar was introduced in the sixth interspace at the anterior border of the axilla, and 12 fluid ounces of pus were drawn off. This gave great relief, and the next night the patient was able to sleep comfortably, and his temperature fell to below normal.

The next day, October 8, a small curved canula, fitted with a stopcock, was introduced, and about 2 drachms of fœtid pus withdrawn, and the cavity washed out with a weak solution of iodine. The canula was left in the chest. An hour and a half after the patient had a rigor. Through the night he complained much of the pain of the canula.

The following day, October 9, the cavity was again washed out with a weak solution of iodine, but the patient begged to have the canula removed, saying that he did not in the least mind the pain of fresh punctures, but the presence of the canula was intolerable; this was accordingly done. The chest was now resonant in front down to the level of the sixth rib, 2 inches below the nipple; below this and in the lower part of the axilla it remained dull and without expansion. After the injection of iodine on this occasion the patient said he tasted it in his expectoration, but on applying the starch test no trace of it could be discovered.

It is hardly necessary to give the daily report of the subsequent progress of this case. The chest was punctured every day, sometimes in the same, sometimes in a different place; the pus was drawn off, the cavity washed out with a weak solution of iodine in warm water, half a fluid ounce of the tincture to a pint, till the fluid removed was free from smell or admixture of pus, and then half an ounce of a mixture of equal parts of tincture of iodine and water, for which the undiluted tincture was subsequently substituted, was injected and left in the chest. On one occasion when introducing the trocar the patient was seized with a severe darting pain, which extended across the upper part of the abdomen, and was followed by difficulty of micturition. This I attributed to the intercostal nerve having been pricked.

This mode of treatment was continued till October 13. The area of dulness had now considerably diminished, but the patient continued to have slight shiverings and febrile exacerbations, and did not gain strength.

On October 13 I determined to have a larger permanent opening made. Accordingly, Mr. Andrew Clark introduced a large-sized trocar and canula close beside one of the former punctures at the anterior border of the axilla, but failed to reach the cavity, and no pus could be got to flow. The canula was accordingly withdrawn and the opening closed. An abscess now formed near the seat of the punctures, which was, however, quite superficial, and did not communicate with the cavity in the chest. In consequence of this and the difficulty experienced in reaching the cavity the treatment was suspended for a short time.

On October 25 the signs of the fluid again accumulating having become apparent, the chest was again punctured, and 9 fluid ounces of fœtid pus drawn off, and the cavity washed out and injected with iodine as before. From this date till November 4 the operation was repeated daily; the fine trocar was introduced through a minute opening which became established. The effects of the treatment were most satisfactory; the amount of fluid withdrawn daily was diminished to less than a fluid ounce, and consisted of a dark brown liquid smelling strongly of iodine, and entirely free from any signs of decomposition. The patient lost his hectic, recovered his appetite, and began to regain flesh and strength. On November 3 he was able to sit up for a short time, and I began to look forward to a successful issue.

On November 4 I proceeded to wash out the chest as

usual, using rather a larger trocar, which I introduced through the same opening. After withdrawing the discharge I began to inject the cavity with the weak solution of iodine and warm water. I generally used to inject about 4 fluid ounces at a time, and then withdrew it, and so continued till the fluid returned free from pus. On this occasion I determined to inject a rather larger quantity, in order to determine the size of the cavity, and whether it was diminishing. The patient, who always took the keenest interest in the proceeding, said to me during the operation, 'You are not getting on so fast as usual.' Immediately afterwards he became deadly pale, his arms stiffened, and his pulse became very slow, his pupils were widely dilated, and his breathing gasping. I at once withdrew the fluid which I had injected, which amounted to 6 fluid ounces. The cavity, as appeared on post-mortem examination, would easily have held twice as much. The patient, who was profoundly unconscious, now became flushed, his pulse and breathing extremely rapid; he had convulsive tremors of the right arm and leg, the hand was clenched, and the arm rigidly flexed; the left limbs were also rigid but extended; the head was sometimes turned to the right, sometimes to the left; the eyelids were closed, the eyeballs were constantly rolling from side to side, and there were spasmodic twitchings of the muscles of the right side of the face. The pupils were widely dilated and insensible to light; the patient's body became bathed in a profuse sweat, and the temperature rose rapidly; at 1.15, three hours after the attack, it was 107° in the axilla; the pulse was 142, the respiration 72. He passed his urine and motions in the bed, occasionally hiccoughed, and made abortive attempts at vomiting.

At 2.40, as his temperature was still 107°, I ordered a bath at 80°; when taken out at 2.55 the temperature had fallen to 105·2°, and the rigidity of the limbs was much relaxed. He remained unconscious, with general convulsive twitchings. His breathing became more and more embarrassed, and he died at 2 A.M., sixteen hours after the seizure.

The post-mortem examination, which was made by Dr. Coupland, did nothing to clear up the nature of the case. On the right side the pleural cavity was divided by firm fibrous adhesions into two compartments, one corresponding to the axillary, lower dorsal, and lower mammary region; the other was situated between the base of the lung and the diaphragm; the former contained a few ounces of pinkish

purulent fluid, stained with iodine; the latter did not contain any fluid, but some masses of soft brownish lymph, smelling of iodine. All the lower part of the lung, except where the cavities were present, was firmly united by fibrous adhesions to the thoracic walls, and was much condensed by pressure. The upper lobe was normal. The left lung and pleura were normal, with the exception of some congestion and œdema of the depending portions. The heart was normal; all its cavities contained a small quantity of post-mortem coagula; the pulmonary artery was also partly filled with soft recent coloured coagula, but neither in it nor in the pulmonary veins or cavæ were there any adherent or decolorised thrombi.

The brain and its membranes appeared quite normal; no thrombosis or embolism of the sinuses or arteries could be discovered. Portions of the medulla oblongata were submitted to microscopical examination, but nothing abnormal was detected.

The occurrence of convulsions during the operation of washing out the pleura in empyema has lately excited a good deal of attention, especially in France, and several such cases have now been recorded. To some of these, which have been made the subject of communications to the Société Générale des Hôpitaux, I will briefly refer.

Dr. Vallin relates the case of a young man, aged 23, the subject of empyema of the left side. He was treated by washing out the pleural cavity daily, by means of a drainage tube, with a solution of carbolic acid. On the sixth repetition of this operation the patient was suddenly seized with syncope, followed by convulsions and opisthotonos, and death took place in about six hours. On post-mortem examination nothing was found to account for the symptoms; there was no embolism of the brain or thrombosis of the pulmonary veins or heart.

Dr. Raynaud relates a case of chronic empyema treated by a drainage tube and irrigations of warm water. At the end of three months the patient was almost well, and was on the point of being discharged from the hospital. On commencing to remove the tube it was found that a small quantity of pus had collected from the tube having become accidentally choked by a crust; accordingly a fresh irrigation was made. During the operation the patient suddenly became pale and lost consciousness, the pupils were widely dilated, the pulse was arrested, and the respiratory movement ceased; in about a minute clonic convulsions of the

extremities supervened, and some opisthotonos; the face became livid, and two enormous thrombi formed in the upper eyelids. In about a quarter of an hour the convulsions ceased, but a state of coma with stertor continued for three-quarters of an hour longer; he then recovered consciousness, but remained dull and heavy, and there was noticed to be paralysis of the right arm. Gradual recovery took place; the treatment of the empyema was resumed with great caution, only very small quantities of fluid being injected, and a perfect cure was effected.

Dr. Lorey reports the case of a man, aged 27, with empyema of left side. He was treated by irrigations, by means of a syphon, of warm water, to which a little alcohol was added. The treatment was continued for three weeks, at the end of which period, while the chest was being injected with an ordinary irrigator, the syphon having been removed, the patient suddenly became pale, his pulse slow and intermitting, and his respiration feeble; he lost consciousness, and there were some convulsive movements of the lips and upper extremities. Consciousness soon returned, but the eyes remained fixed, the pupils widely dilated, and the vision impaired. The eyes were examined with the ophthalmoscope; the arteries of the retina were found to be much reduced in calibre, the veins in part dilated and congested. The same evening the operation of washing out the chest was repeated; while this was being done the patient again lost consciousness, the face became extremely pale and the pulse slow; general convulsions supervened. The body then became bathed in sweat, and the pulse very rapid; these symptoms were followed by cessation of the convulsions and a condition of profound coma with stertorous breathing; at 3 the next morning the convulsions returned and recurred in a succession of paroxysms till 6, when the patient died. A careful post-mortem inspection was made, with a microscopical examination of pons and medulla oblongata, but nothing was found to account for the symptoms; there was no thrombosis of the pulmonary veins or embolism of the brain.

Two explanations have been offered to account for these attacks: one is that of embolism; it is supposed that in consequence of the arrest of the circulation in the lung caused by long pressure of the fluid in the pleura thrombi are liable to form in the pulmonary veins. These are displaced during the manipulations, and are carried into the circulation, and

get arrested in the cerebral arteries, and so cause the convulsions. That this accident is liable to occur in cases of pleuritic effusion is proved by many cases now on record. Thus Dr. Vallin, in a communication to the Société Générale des Hôpitaux, relates the case of a young man, æt. 21, of good constitution and habit, who was attacked by pleurisy of the left side; considerable effusion took place, and paracentesis was resolved upon, but the day before that fixed for the operation he was suddenly seized with right hemiplegia. The chest was subsequently tapped, and the patient ultimately succumbed to the effects of empyema. On post-mortem examination the left Sylvian artery was found blocked by an embolus. He also cites another very similar case, reported in the 'Bulletin de la Société Anatomique' for 1861, in which the right anterior cerebral artery was plugged. A third case, also cited by him, is reported in the 'English Army Medical Report' for 1859. A soldier, æt. 22, was admitted into the hospital with left pleuritic effusion; on January 14 he was seized with left hemiplegia. His chest was subsequently tapped, and he ultimately died hectic from the effects of empyema. Here the right corpus striatum was found softened down, no doubt from the effects of an embolus.

Dr. Balthasar Forster, in his clinical lectures, describes a case of pleurisy in which, twelve hours after paracentesis, embolism of the renal artery and bifurcation of the aorta took place. On post-mortem examination the right pulmonary veins and right auricle were found occupied by a thrombus. Many other cases of embolism might be quoted.

In none, however, of the cases of convulsions which I have related was any embolism or thrombosis discovered after death, nor were the symptoms like those usually observed in cerebral embolism.

According to the second explanation the convulsions are reflex, and due to irritation propagated from the pleura to the bulb, and certainly the symptoms closely resemble those of reflex epilepsy. Against this view it may be urged that in all the cases the same operation had been repeatedly performed without any ill consequences; and in empyema of long standing the pleura must be looked upon as the sac of a chronic abscess, and cannot be supposed to be very sensitive to irritation. The question, therefore, must at present be left undecided.

The practical lessons to be learnt from these alarming

accidents are, I think, these:—First, in cases of pleurisy, where there is much effusion, to perform paracentesis early, and not to leave the lung so long compressed as to endanger the formation of thrombi in the pulmonary veins. When performed early, experience has, I think, shown that paracentesis with the aspirator is almost entirely free from danger, though this is by no means always the case when the lung has been long compressed, and rendered incapable of expanding, the heart much displaced, and the circulation through the chest greatly deranged.

Secondly, in cases of empyema, when it becomes necessary to wash out the chest, to use great caution in injecting the pleural cavity. In all the cases I have cited the seizure took place during the injection, and not during the withdrawal of the fluid. In my patient rather a larger quantity than usual of the fluid was being injected, and this appears to have been the case in at least one of the other patients. The quantity of fluid injected at once ought to be very small, at the most a few ounces, and very little force used. It should moreover be remembered that the danger of exciting these terrible convulsions seems to be greater after many repetitions of the operation than in the earlier stages of the treatment. The nature of the fluid employed does not seem to have any special influence in causing these convulsions. In my case a weak solution of iodine was being used; in another a solution of carbolic acid; in a third warm water, to which a little alcohol had been added; and in a fourth warm water only.

VII.—*Case of Effusion into left Pleural Cavity. Paracentesis and aspiration of* 80 *ounces of serum. Sudden death, apparently by syncope,* $3\frac{1}{2}$ *hours afterwards.*

By W. H. Broadbent, M.D. *Read October* 23, 1876.

THE following case is one which, from the event, ought to be placed on record without delay. The account here given is abstracted from notes taken by Mr. E. Downes.

E. M., a shoemaker, æt. 62, was admitted into St. Mary's Hospital, under my care, Jan. 21, 1876, complaining of shortness of breath, and occasional attacks of dyspnœa.

His family and personal history were good. He had lived well, seldom tasted spirits, but drank three or four quarts of

beer a day. His appetite had been falling off during the winter, and at the beginning of the year he found his breath becoming short. He had also a troublesome cough, with much expectoration. The trouble in his breathing gradually increased in spite of blistering and other treatment up to the time of his admission, when the usual signs of fluid in the pleural cavity were found.

The chest expanded freely on inspiration. There was dulness with absence of respiratory sounds over the front of the left chest; dulness over the back on this side, except at the apex; almost complete respiratory silence; vocal sounds feebly conducted, and vocal vibration extinguished, except between the scapula and spine and a short distance lower down in the same line.

There was no impulse in the cardiac region; the apex-beat was absent at the usual situation, and the heart-sounds very indistinct at this point. A feeble impulse felt and sounds distinctly heard to the right of the sternum.

Temp. 99·8°; pulse 100, weak. Tongue furred; urine dark, with copious lithate sediment; sp. gr. 1026; no albumen.

The patient had bad nights; complained of pain in the chest, and suffered from severe attacks of dyspnœa, for which ammonia and ether were given.

On the 26th, after five days' rest, a medium-sized aspiration needle was passed into the chest, by the resident medical officer, Mr. Sworder, between the seventh and eighth ribs, a little to the outer side of the line of the angle of the scapula, the point chosen being rather further from the spine than usual, as the persistence of vocal vibration appeared to indicate adhesions more internally; and about 80 ounces of serum were withdrawn. No forcible suction was employed; no pain was caused, and no symptoms of fainting were induced. A little brandy, however, was given during the operation.

The heart came back nearly to the normal situation, and a degree of resonance returned over the upper part of the lung. It was known that a considerable amount of fluid remained in the chest, and apparently much more might have been removed without causing inconvenience, but it was considered more prudent, the patient having had paroxysms of dyspnœa, and being elderly, and his structures, therefore, less elastic than at an earlier period of life, to stop at this point, and if necessary repeat the operation.

The patient said he was relieved, and the only discomfort he experienced was from the cough which usually follows the operation. At 3.30 P.M. he appeared to be doing well in all respects; at 5 P.M. he was seen by the medical man who sent him to the hospital, Mr. Walder; he was then cheerful, and seemed and felt better for the withdrawal of the fluid. About this time he had his tea, which meal probably contributed to the result. At 5.45 he was observed to be very quiet, and when looked at more carefully was found to be dead.

The possible causes of this sudden and unlooked-for termination of the case, it was thought, might be syncope from failure of the heart, formation of clot in the heart, detachment of thrombus from the veins of the lung which had been compressed, and lodgment of this in the heart or transmission of it as an embolus to the arteries of the brain, or finally asphyxia from profuse secretion in the bronchial tubes of the re-expanding lung. Of these simple syncope appeared the most probable, but it might have been looked for during, or shortly after, the operation, and when the patient was sitting up in bed, rather than when lying down, 3½ hours afterwards.

The post-mortem examination, made forty-five hours after death, showed that no other cause than syncope could be traced. The following are the particulars:—

Body well nourished; rigor mortis marked; no emphysema round the puncture; normal resonance over front of chest on both sides; dulness over left back.

In left pleural cavity about 2,000 c.c. of clear serum; slight ecchymosis in visceral pleura on lower part of lung; old adhesions near apex; recent filamentous adhesions at back and outer side; recent lymph over entire lung. Upper and anterior part contained air, and much frothy mucus exuded from the bronchial tubes; the lower part at extreme base had not expanded, but sank in water; no evidence of thrombosis in pulmonary veins or arteries; right lung presented no abnormal appearances worthy of note.

Heart rather large, white patches on surface; walls pale and flaccid. It occupied very nearly the normal situation, but was twisted on the great vessels of the base to the left, so that the aorta, which was large, was exposed from the root upwards, while no part of the pulmonary artery was visible, and the left edge of the base of the heart was formed by the conus arteriosus of the right ventricle bending round the aorta.

Right side of the heart empty, its walls very flaccid; some thickening of anterior cusp of tricuspid valve; left side also relaxed and flaccid; mitral valve much thickened near free margin, but apparently competent; aorta dilated, but perfectly elastic; very little atheroma; valves normal.

Other organs, including brain, which was most carefully examined, healthy.

VIII.—*Sequel of a Case of rapidly contracted Cavity in Phthisis; communicated in* 1871.* By C. THEODORE WILLIAMS, M.D. *Read November* 10, 1876.

IN October 1871 I had the honour of bringing before this Society three cases illustrating the rapid contraction of cavities in phthisis, cicatrization, as far as could be proved by the evidence of physical signs, having taken place in periods varying from two to three months. The reading of the paper was followed by a discussion, in the course of which the existence of cavities in these patients was contested. Certain eminent physicians, on the one hand, expressed doubt as to excavation having taken place, whilst other eminent physicians stoutly maintained that the physical signs which had been narrated, clearly proved the existence of a cavity in each case.

As all the patients were then alive, and had, to a great extent, recovered, it was impossible to settle this important question; but in January 1875 one of them (Case 2) died of congestion of the right lung, and we had the opportunity of testing the diagnosis in this instance by a post-mortem examination.

The case being now complete, I propose, in accordance with a good custom of the Society, to sketch the subsequent history of the patient, and to describe briefly the appearances presented after death, preluding this account by a short abstract of what has been narrated in full in vol. v., p. 29, of our 'Transactions.'

Isabella M——, æt. 53, widow, nine children, was admitted into Brompton Hospital, April 14, 1871, with a history of pleurisy twelve years ago, from which she recovered, and of cough, expectoration, night sweats, and

* Vol. V. p. 29.

wasting of one year's duration. Latterly she had suffered from diarrhœa. On examination of the chest dulness was detected over the whole left side, front and back, cavernous sounds were audible in the left front, from the clavicle to the third rib, and rhonchi and râles were scattered over both lungs. The pulse was 100, and the temperature normal.

She was treated with cod-liver oil and quinine, gallic acid powders, and morphia linctus.

On May 8 she complained of pain in the lower left chest; some crepitation was detected in that region, which passed away in twenty-four hours under the use of counter-irritation. In June there was slight œdema of the lower extremities, which soon disappeared, and there was no trace of albumen in the urine.

On June 12 the cavernous sounds were less distinct in the upper left lung, and by July 13 the patient, after a stay of three months in the hospital, had greatly improved, taking cod-liver oil and tonics regularly, and good nourishing food. The cough had diminished, and she had gained 1½ stone in weight. Cavernous sounds had completely disappeared from the left chest, some slight tubular sounds being audible under the left clavicle. The dulness remained unchanged, and some rhonchus was audible in the lower portions of the lung. She became an out-patient under Dr. Tatham, who noted on October 20, in addition to the above signs, some crackle at the outer angle of the scapula and observed that the heart was drawn up, and that the stomach resonance reached as high as the fifth rib. In January 1872 she was examined by Dr. Pollock and myself. We then found marked flattening of the left side, which measured one inch less in circumference than the right; resonance on percussion was traced from the right side some distance across the median line, showing the right lung to be drawn over to the left side. Some tubular sounds were audible above the right scapula. No cavernous sounds could be detected in the left chest; the heart was drawn up, the apex beating under the fifth rib.

In April of the same year she had a severe attack of capillary bronchitis, in which the dyspnœa was so great, and the lividity so marked, that it seemed impossible that she could survive, considering the crippled state of one of her lungs; but she recovered, and was able to come to the hospital as an out-patient for some time afterwards, although her breath was very short on the slightest exertion.

In December 1874 she had an attack of congestion of the right lung, of which she died, January 4, 1875.

During the last two years of her life I had seen her from time to time, and had noticed the progressive contraction of the left chest, which amounted eventually almost to a deformity. The physical signs previous to the attack had indicated further shrinking of the lung, and displacement of the neighbouring organs.

With the assistance of Mr. Parry, late assistant medical officer to the Brompton Hospital, I made an autopsy twenty-three hours after death.

The body was not much emaciated; the left side of the thorax was much flattened and shrunk, measuring 13 inches in circumference at the level of the nipple, compared with 15½ inches, the circumference of the right chest at the same level.

On opening the thorax the heart was found displaced to the left, the apex being situated immediately under the fifth rib, three inches to the left of the nipple.

The *right* lung was large and extended across the median line to some distance. The upper lobe contained a few old cicatrices at the apex and a small quantity of cretaceous matter. The rest of the upper lobe and the middle lobe were of dark colour and highly emphysematous. The lower lobe was much congested. The bronchi were dilated. Some adhesions existed at the apex. The *left* lung was contracted to the size of a man's fist, its outer border not reaching to the junction of the cartilages with the ribs, but it appeared to be hidden in the folds of thickened pleura. It weighed 9 oz. The pleura was adherent in parts, and thickened in other parts to the extent of ⅛ inch, and the general appearance was as if some effusion had once taken place and had been absorbed. At the root of the lung the pulmonary veins and arteries were somewhat contracted, and on section presented a puckered appearance.

The lung itself was dark grey in colour, hard and tough to the touch, and more or less in a state of fibrosis. On section a small partly cicatrized cavity was seen situate about an inch below the apex, and nearer to the anterior margin than to the posterior. Its size was about that of a date-stone, and its shape very irregular and anfractuous, there being the remains of a second channel running parallel to the major axis of the first one. The whole appearance was that of a cavity which had undergone contraction and partial

cicatrization, parts of the cavern not being completely obliterated. No bronchus appeared to open into the cavity, but about $\frac{1}{8}$ inch from its lower extremity there was a bronchus an inch in diameter entirely blocked and obliterated, which had evidently at one time communicated with the cavity.

The lower lobe contained much fibroid material, and also some vesicular tissue, and a small nest of calcareous material the size of a pea.

The interlobular septa were much thickened; the bronchial glands deeply pigmented and enlarged. The right cavities of the heart were somewhat dilated. The other organs were healthy.

Remarks.—The interest of this case appears to lie not alone in the pathological changes which are familiar to most members of this Society, but in the fact of their course being traced with tolerable accuracy by the clinical symptoms and physical signs.

The patient's illness commenced with an attack of pleurisy or pleuropneumonia, from which she recovered with a thickened and adherent pleura and a certain amount of consolidation. These lesions did not appear to have troubled her much until eleven years later, when symptoms of lung-irritation and wasting commenced, and, at the time she entered the hospital, a cavity of considerable size had formed.

Up to this date no marked contraction of the chest-wall or lung appears to have taken place; and that the left lung still occupied the lower portion of the left chest was proved by moist sounds being audible in that region during the catarrhal attack, as well as over the right lung.

Then supervened fibrosis, which may have had its starting-point in the thickened pleura, and which caused the contraction of the cavity and the obliteration of the bronchus, these processes being only partially complete in June, 1871, but tolerably distinct in July of the same year.

It would appear that the first closing of the cavity took place without any material displacement of organs, or even shrinking of the chest-wall, these changes following at a later date.

In October the displacement of the heart had commenced, and in January of the following year the traction of the right lung across the median line, the raising of the heart's apex, the collapse of the chest-wall, were all evident, show-

ing that fibrosis had extended considerably, and by that time had rendered the lung nearly useless.

The shrinking of the side still proceeded, and indicated that the lung-contraction had not ceased. The date of the right lung being attacked is not so distinct; the catarrhal sounds on the patient's admission in 1871 probably cloaked any existing evidence of consolidation, and, consequently, this was not diagnosed till somewhat later. The subsequent attack of capillary bronchitis was the means of inducing a large amount of emphysema, and hence the increased breathlessness which followed; and it is not wonderful that she succumbed to a second congestive attack.

That the case was not one of chronic pneumonia, but phthisis arising from inflammation, was shown (1) by the presence of caseous matter in the lung, (2) by the cavernous formation, and (3) by the symptoms which preceded the patient's entry into the hospital; but originating, as the disease did, in an inflammatory attack, it had a greater tendency to remain localised, on account of the large development of the fibroid element, and the consequent isolation of the caseous masses.

The œdema appears to have resulted from some temporary state of blood, as there was no return of it, even when the circulation suffered great obstruction during the congestive attacks.

In this case the diagnosis of the cavity was easy, the ordinary cavernous voice and respiration sounds being present, their position and apparently limited situation confirming the opinion. Many cavities are doubtless overlooked during life, even by careful auscultators; but this arises either from the bronchus leading to them being blocked, or their being small and deep-seated; or, again, from a large development of emphysema, which may render the conduction of the cavernous sounds exceedingly feeble. As regards the other and opposite error—viz. that of mistaking consolidation for excavation—it ought to be a very rare event, as in cases where extensive consolidation conducts the sounds of a bronchus to the ear in such a manner as to somewhat imitate cavernous sounds, the difference of note in the expiration, the gurgle, or the succussion sound on coughing, the combination of these signs with an examination of the expectoration generally helps one out of the difficulty; and I would venture in conclusion to remark that far more cavities are overlooked than are erroneously diagnosed.

IX.—*A Case of Localised Hypertrophy of the Scalp.* By W. J. Walsham. *Read November* 10, 1876.

J. M., æt. 14 years, came under my care at the Metropolitan Free Hospital, Sept. 10, 1876, complaining of a swelling on the left side of the head. His father stated that the swelling began some eight or nine years ago, as a small lump behind the ear, which was first noticed after he had undergone some operation on the eye at Moorfields, and had had a blister applied behind the ear.

The swelling is said to have increased at first slowly, but of late rather rapidly. It has not, however, undergone any perceptible enlargement since he came under observation.

The patient presents on the left side of the head a peculiar hypertrophied condition of the scalp, appearing as a soft loose mass, limited in front by the ear, and above that organ by a line corresponding very nearly to the temporal artery. From this boundary it extends backwards for about 4 inches, and downwards for about 6 inches to a little below the lobe of the ear.

The diseased portion of the scalp can readily be pinched up from the parts beneath, is doughy yet elastic to the touch, not painful except on being handled, and does not pulsate. In front it presents a peculiar lobulated appearance, and terminates somewhat abruptly at the line before mentioned, while behind it gradually passes away into healthy scalp. The lobulated portions are raised, irregular, and of a pinkish-white colour, the rest of the mass being of the same colour as the healthy scalp. The hair follicles appear enlarged and further apart than usual, but the hair itself is healthy.

The pulsation of the temporal artery, as before stated, can be distinctly traced along the anterior edge of the swelling. The posterior auricular and occipital arteries can be followed for some distance into the posterior part of the mass, but none of these vessels appear to be involved in the disease. At the lower part, behind the ear, two hard bodies can be felt, rather smaller than peas, freely moveable, and feeling like glands.

As to the nature of the disease, I am inclined to regard it as an hypertrophy of the scalp (possibly of the nature of

the so-called fibroma molluscum), but I confess I have never come across a similar form of disease in this situation, neither have I been able to find a published account of a like case.

The history of its non-congenital origin, and the absence of any pulsation or visible enlargement of its vessels, preclude the idea of its being of a nævoid nature. Lymphatic obstruction has been suggested as a possible cause, but it does not strike me as at all a probable one.

Hitherto I have been quite unable to discover any efficient cause for the hypertrophy. Whether the application of a blister behind the ear may not have had something to do with it I am unprepared to say, since I am not aware that any such application has produced a like result.

I may also remark that the disease is roughly confined to that portion of the scalp supplied by the temporal branch of the fifth nerve; and as the disease appears to have followed upon irritation of the fifth, some reflex nervous irritation of the auriculo-temporal naturally suggests itself. I merely throw out this suggestion, but do not attach much importance to it.

Several plans of treatment have occurred to me, such as application of pressure, partial removal, &c.; but I shall be pleased to receive any suggestions the Society may have to offer.

X.—*A Case of Lymphatic Leucocythæmia treated with Phosphorus.* By W. R. Gowers, M.D. *Read November* 24, 1876.

THE case which I am about to bring before the Society has been termed one of Lymphatic Leucocythæmia, because it presented such an increase in the white corpuscles of the blood as is usually held, when permanent, to come under the generic designation, and there was reason to associate that increase with enlargement of the lympathic glands, rather than of the spleen. But some of the pathological facts of the case resemble those of Hodgkin's Disease more closely than those of ordinary cases of Leucocythæmia.

The patient was under the care of Dr. Wilson Fox, in University College Hospital, and came under my notice

during temporary charge of the ward. I have to thank Dr. Fox for the opportunity of examining the condition of the organs, and of bringing the case before the Society.

James S., æt. 17, clerk, was admitted July 22, 1876, with well-marked leucocythæmia. In his family history there was nothing of significance, except the early death of six out of seven brothers and sisters. His own health had been good until the preceding Christmas, about which time he caught a severe cold, and to this he attributed his subsequent indisposition. Cough persisted throughout the winter. In April, three months before admission, he noticed, for the first time, a swelling below the right ear, which gradually spread downwards towards the collar bone. Another swelling appeared, soon afterwards, in the right armpit. Both lessened under medical treatment, but in June they again increased in size, and he then observed that his chest was becoming more prominent.

On admission the lad presented considerable surface pallor, moderate emaciation, and enlargement of the lymphatic glands. In the posterior triangle of the neck the enlarged glands formed a series from the mastoid process to the shoulder; the axillary glands and the infraclavicular glands were also considerably enlarged. One of the cervical glands was the size of a walnut. The femoral and inguinal glands were also large, and larger on the right side than on the left. There was clear evidence of the presence of a solid mass in the anterior mediastinum. The chest was enlarged in the antero-posterior diameter, which measured 10½ inches, according to a cyrtometrical tracing at the nipple level; while the transverse diameter was only 10 inches. There was very marked prominence of the lower half of the sternum and adjacent rib-cartilages. The intercostal spaces were indistinct on each side of the chest front, especially on the left side; towards the axilla they became distinct; the surface veins were enlarged over the bulged area. Corresponding to the prominence was an area of absolute dulness, pyramidal in form, the apex near the top of the sternum, the base blending with the liver and heart dulness. Its right limit corresponded with a line drawn from the inner end of the right clavicle to the edge of the thorax in the right nipple line. The left limit was a line passing from the upper part of the left edge of the sternum through the left nipple to the sixth rib, where it was continuous with the splenic dulness. Breath-sounds were weak over the dull area; harsh

elsewhere, with bronchial râles. Vocal fremitus was absent over the area of absolute dulness; vocal resonance intensified over the upper part, lessened over the lower part of the dulness. In the back a little defective resonance was noted in the left interscapular region. There was considerable dyspnœa, and a good deal of watery expectoration.

The apex-beat of the heart could not be felt; the sounds were natural. His pulse was small and hard—112 to 124. The digestive organs were healthy.

The spleen was enlarged; its dulness extended in the axilla from the edge of the thorax as high as the sixth rib. It could not be felt below the margin of the thorax.

The nervous system presented nothing abnormal. The retinæ were healthy. The urine contained no albumen, its specific gravity was 1015.

The temperature was 103°.

As already mentioned, there was very marked pallor of surface. The blood was paler than normal, and presented under the microscope great increase of white blood-corpuscles —104 were counted in one field. Most were of normal size, but some were below the average size. They showed active amœboid movements. The proportion of white to red was as 1 to 4.

During the first fortnight after admission the patient took only effervescing mixture. At the end of the first week he was a little better. The post-sternal dulness, the enlarged surface veins, and the glands were all thought to be a little less; and a slight decrease in the number of white corpuscles in the blood was noted. His temperature ranged from 100° to 101°. During the second week, however, no alteration could be detected; the blood remained the same; the temperature rose a little, being generally 101°. He was then ordered (on Aug. 7) $\frac{1}{30}$th of a grain of phosphorus three times a day. Towards the end of the following week a marked improvement was observed. The temperature fell to a lower average, rarely exceeding 100°, and frequently ranging from 99° to 100°. He gained 2lb. in weight. At the end of that time, having been kept previously in bed, he was allowed one fine day to get up and go out. Next day the temperature rose higher, and during the succeeding week, the second of the phosphorus treatment, it averaged 101½°, the maximum being 102·4°; the weight gained was again lost, and marked increase in the size of the glands and spleen was observed those

in the axilla filling up the cavity. The limits of the mediastinal dulness remained the same. A slight increase was noted in the number of the white blood-corpuscles, and, in addition, rounded masses were seen, similar in appearance to the white blood-corpuscles, but two to four times the size of the latter. The urine continued acid, generally deposited urates, and had an average specific gravity of 1016. It contained no trace of albumen or sugar.

During the next fortnight the weight remained stationary; the average temperature was 101°. Towards the end of the fourth week of phosphorus treatment diarrhœa came on, very obstinate, and checked at last, partially, by lead and opium. There was no hæmorrhage. His temperature, however, became lower, the average being 99·8. Slight œdema was noticed in depending parts, but the urine was free from even a trace of albumen. At the end of the fifth week the glands had become distinctly smaller, and there was a considerable diminution in the number of white corpuscles in the blood, but the diarrhœa returned, the œdema continued, and a trace of albumen appeared in the urine. The phosphorus was stopped, and the diarrhœa was then quickly checked.

During the succeeding week the patient took only bismuth mixture. At the end of that time the decrease in the white corpuscles was such that only 24 could be counted in the field of the microscope. The albumen in the urine had, however, rapidly increased to a sixth, and casts were found, chiefly fatty, some hyaline and granular. Epithelial cells, such as line the pelvis of the kidney, were seen presenting well-marked fatty degeneration. Free fat was also seen in some specimens.

A week later the œdema had become general, and the albumen had increased to one-half the volume of the urine. The enlarged glands were distinctly smaller, and were harder. There was also very marked decrease in the poststernal dulness. The right edge passed down along the middle of the right cartilages, and to the left a band of resonance separated this dulness from that of the spleen. The diminution in the white corpuscles continued, so that only 18 could be seen in the field of the microscope. The bronchial secretion, which had essened, again increased. The temperature ranged from 99½ to 100½°.

The patient's weakness, however, increased. His urine be-

came, when heated, nearly solid from albumen. The diarrhœa returned. His temperature fell lower than it had been at any previous period, rarely reaching 100°, and generally being at or near the normal, occasionally subnormal. His weakness continued to increase, and he died on October 18.

Post-mortem examination twenty-four hours after death.

The emaciation was great, scarcely any fat remaining on the abdominal and thoracic walls.

The masses of enlarged glands in the neck extended on each side of the larynx into the posterior triangles, and those on the right side passed down behind the clavicle. There were also enlarged glands behind the great pectoral muscle, continuous with those in the axilla, where was a large mass of glands. A similar mass existed in the left axilla.

On raising the sternum masses of enlarged glands were seen to occupy the upper and lower portions of the anterior mediastinum. They lay singly, and in groups, along the diaphragm. A large conglomerate mass of glands lay behind the upper part of the sternum, and extended on each side, adhering to the cartilages of the second and third left and the third right ribs. It corresponded in position with the thymus gland, but no evidence of origin in that structure could be traced. This mass on the left side connected firmly the upper lobe of the left lung with the pericardium. Several of the nodules of this mass were distinctly embedded in the substance of the lung, as if invading it. One or two isolated nodules, in size from that of a hemp-seed to that of a horse-bean, lay within the left lung contiguous to the bronchi.

A dense mass of glands extended down the whole posterior mediastinum. The œsophagus was pressed upon on each side, and the lower part of the arch of the aorta was surrounded, but not compressed, by the glands which surrounded the bifurcation of the trachea. Each bronchus was compressed by the glands. Many of these glands were as large as a bantam's egg, and were adherent to the lung, as if growing into it. A mass of growth, part of this mediastinal mass of glands, had penetrated into the cavity of the pericardium, where, by a concave surface as large as a walnut, it was in contact with the left ventricle. Near it a number of points of growth, about the size of pin-heads, appeared on the inner surface of the pericardium, and were continuous with the mass of growth which lay behind.

Immediately behind the stomach was a mass of glands of considerable size, extending along the whole upper border of the pancreas, and another mass lay beside the vertebral column, extending behind the peritoneum as far as the pelvis, where they passed down beside the iliac veins. They were adherent to one of the intervertebral cartilages, but this did not appear to be eroded.

In most places the glands were firm, and some were very hard. In those in the neck the distinction between cortical and medullary substance was absent. In some the substance was opaque, in others very vascular. In the vascular glands there were scattered dead-white softer spots, passing into a yellowish cheesy change, which was disseminated in minute spots through them. In other glands the tissue was firmer, more transparent, and glistening, grating under the knife like scirrhus. In these indurated glands, here and there, were transparent softer spots and scattered caseous tracts, in some places as large as a split pea. Around some glands distinct hæmorrhage had taken place into the cellular tissue. Those in the posterior mediastinum presented similar characters, but contained more pigment, and the mass in the right mediastinum presented a pecular mottling of hyperæmia, opaque induration, caseation, and pigment. Some of them presented a very interesting appearance. Outside was a thickened capsule, and the interior was made up of small roundish areas, which looked as if they were the transformed loculi of the gland, some translucent, and others in every degree of opacity down to yellowish cheesy globes.

The pericardium contained no excess of fluid. The parietal layer was very vascular, but the visceral portion was normal in appearance.

The heart was very small, but otherwise healthy. Its weight, with half an inch of the aorta, was 4½ oz.

The spleen was enlarged, but not considerably, measuring 6 inches in length, 4½ inches in width, and 2 inches in greatest thickness. Weight 13½ oz. The tissue was firm, translucent, with pale spots scattered throughout, evidently enlarged splenic follicles. They projected from the cut surface more than in health, and had undergone lardaceous degeneration, staining instantly with iodine, and giving, with sulphuric acid, a black colour, the so-called amyloid reaction. There were also many caseous areas in the organ, some of which were characteristic infarctions—wedge-shaped, with injection round. Some very minute white spots could also be seen,

apparently thickened vessels. One of these lay just below the apex of a wedge-shaped infarction, and a vessel could be traced from it to the cheesy mass.

The liver weighed 35½ oz. Disseminated through it were small glistening semi-transparent spots, scarcely prominent, and not conglomerate, the smallest being about half the size of a grey granulation, and the largest five or six times that size. They occurred throughout the whole of the organ. From fifty to sixty might be counted in a square inch. No lardaceous degeneration could be detected in the organ.

The kidneys were large and pale; each weighed 5½ oz. The capsule was easily separable. The external surface was smooth and glistening. On section the pyramids were considerably congested; the cortical substance a little increased in size, firm and pale. The Malpighian bodies little prominent.

The supra-renal capsules were healthy.

The stomach was healthy, but the mucous membrane was pale, and towards the pylorus the follicles of lymphatic tissue were enlarged, and visible through the mucous membrane.

Somewhat similar changes were seen in the duodenum. The jejunum was healthy. In the upper part of the ileum Peyer's patches were somewhat hyperæmic, with some enlargement of follicles, and in the patches near the lower end were some small extravasations.

Microscopical examination of organs:—

The lymphatic glands varied considerably in appearance. In all cells like leucocytes were infiltrated, for the most part densely. A fine retiform tissue could in some places be distinguished, among the fibres of which the cells lay. In other places the fibres were less fine, and more or less parallel. And in other situations, especially in the indurated glands, tracts of fibrous tissue occupied considerable areas, with round or elongated nuclei scattered among them. Every gradation could be traced between the last appearances. Where caseation occurred much fat existed.

The spleen presented, as its chief abnormal character, very irregular massing of the corpuscles with which its pulp was infiltrated. In places they were aggregated into tracts or heaps of considerable size. The Malpighian corpuscles, which had undergone the lardaceous degeneration, consisted of similar cells densely pressed together, and somewhat indistinct. These did not stain with logwood, as did those of the parenchyma. A few of the vessels showed the lardaceous degeneration and reaction.

Liver.—The minute growths visible to the naked eye were seen to be composed of corpuscles like leucocytes, and in the centre most had undergone fatty and granular degeneration. Similar corpuscles were scattered through the whole of the liver-tissue and stained very deeply with logwood. The outer portion of the smaller groups passed, by gradually diminishing infiltration, to the average condition. The larger growths were bounded in many cases by flattened liver-cells, apparently compressed by pressure, and lying concentrically to the growth. In some of these areas a finely fibrous reticulate stroma could be seen, but was less conspicuous than is usual in these leucocythæmic growths. There was less obvious relationship of these masses to the vessels than is often seen.

Kidneys.—The epithelium of the tubules was much degenerated, extremely granular, and slightly fatty, the outline of the cells irrecognisable, the tubules choked with granular material, in which the nuclei of the epithelium cells were conspicuous. There was no increase in the interstitial connective tissue, but rounded corpuscles were scattered through the organ between the tubules. Such corpuscles and nuclei were very conspicuous in the Malpighian bodies. Here and there they were aggregated into small masses similar to those in the liver. Some of the larger of these were undergoing degeneration.

The marrow of one tibia was examined. It was very abundant 2 inches below the head, dense, red, and was composed of similar leucocytal corpuscles, densely massed, with a few larger round and oval nucleated cells.

Remarks.—The affection of the spleen in this case was distinct but slight, and was thrown altogether into the shade by the glandular affection. But the existence of the splenic change deprives the case of any direct value as evidence on the question of the existence of such a disease as lymphatic leucocythæmia, which was discussed in this Society last year. I think, however, that there is indirect evidence that the enlarged glands, and not the spleen, were the source of the excess of white corpuscles.

Several points in the details of the case deserve notice. First, there is the remarkable aggressive character of the glandular growth. In many cases of leucocythæmia the size attained by the glands, and the manner in which they have grown together into conglomerate masses, have suggested the idea of an invading growth, and an actual extension to

adjacent organs has been recorded in some instances, as in a case brought by Dr. F. Taylor before the Pathological Society. I am not aware that perforation of the pericardium has been noticed. There is, indeed, nothing remarkable in such invasive character, when it is remembered that independent growths of similar structure may arise in disconnected and distant organs in this disease.

The new growths in this case which were found in the liver and kidneys resembled closely those which are met with in the same organs in other cases of leucocythæmia, some having the character of adenoid growths, others of mere aggregations of leucocytes. It was, however, the rare exception to have the relation between these masses and the vessels which is frequently to be observed in leucocythæmia. The way in which the liver-cells were flattened around some of the nodules of growth was striking, and they, together with the fibrous stroma of the liver, formed concentric layers around the growths. It was easy to see how thus the appearance may have arisen, described by Böttcher and others, of fibrous capsules surrounding and enclosing the nodules of growth.

Another point of much interest is the remarkable degeneration which the glands and liver growth had undergone. In the glands it was a mixture of fibroid and fatty degeneration; in the liver growths it was purely fatty. In the spleen limited lardaceous degeneration had occurred. The only trace of fatty degeneration the spleen presented was the caseation of the infarct-like masses so frequently seen in the spleen in leucocythæmia. All these forms of degeneration have been occasionally noticed in this disease—fatty and fibrous degeneration of glands, fatty or lardaceous degeneration of the new tissue. In the occurrence of these degenerations there is, therefore, nothing extraordinary; the degree to which the glandular degeneration had proceeded is, however, remarkable.

Renal disease is among the rarer complications of leucocythæmia, but has been noted in several cases. Fatty degeneration of the kidneys was found by Schreiber, in a rapid case of leucocythæmia, in a girl æt. 18, but it would appear that the urine was not albuminous. 'Bright's degeneration' is mentioned by Ehrlich as an occasional complication, but he does not refer to the cases on which his statement is based. In this case, however, a high degree of albuminuria was reached with remarkable rapidity, and from the first the casts and epithelium contained fat

I think it is impossible to dissociate the very remarkable diminution in the number of white corpuscles in the blood and the equally remarkable retrograde changes in the new growth. The degeneration in the glands was manifested during life by the diminution in the area of dulness, and diminution in the size and increase in the hardness of the external glands. With this the improvement in the state of the blood coincided. The degenerative changes in the spleen were slight, and affected parts of its structure—the Malpighian bodies, which, as far as pathological observations go, have little to do with the addition to the blood of the excess of white corpuscles. In most cases of leucocythæmia in which their condition is mentioned they are described as atrophied, or normal in appearance, or pale as contrasted with the splenic pulp. The spleen, therefore, in this case presented no degeneration which can be associated with the diminution in the white corpuscles of the blood. It seems reasonable, therefore, to ascribe this diminution to the degeneration of the glands. If so, the overgrowth of the glands must be regarded as the chief source of the excess of white corpuscles in the blood, and the case as one of, in the main, lymphatic leucocythæmia.

What effect in this case can be ascribed to the phosphorus? The known effect of phosphorus is to cause fatty degeneration of the tissue elements—precisely the condition found in the enlarged glands, the new growths in the liver, and the substance of the kidneys. The degeneration, judging from the diminution in size of the growths and the occurrence of albuminuria, commenced during, or soon after, the administration of phosphorus. But it must be remembered that all these degenerations have occurred in cases in which no phosphorus was given. It must be remembered, also, that in a disease of rapid course and high temperature the degenerative tendency will be greater than in more chronic cases. It should also be remembered that the diminution in the corpuscles of the blood and the renal affection reached their height some little time after the administration of the phosphorus was discontinued.

Considering, however, all the circumstances of the case and the tendency of the drug, I think it is reasonable to suppose that the phosphorus may have influenced the rapidity of the degenerative process. It may be objected that phosphorus is frequently given in this dose without the production of such degeneration. But an agent of this character

may accelerate a process which it cannot initiate. Whatever influence on the degeneration of the new growth may be assigned to the phosphorus, it must, I think, to the same extent be suspected of causing the acute degeneration of the kidneys, so remarkably fatty from the onset, and so rare a complication of leucocythæmia.* It may be questioned, also, whether the diarrhœa was not due to the influence of the phosphorus, since it resisted treatment until the phosphorus was discontinued. But, on the other hand, diarrhœa is not a rare complication of leucocythæmia, and has not, as far as I know, been observed when phosphorus is given in other diseases.

In conclusion, I would state that the case is brought forward rather as suggesting points for future observation than as itself affording much aid towards a settlement of the questions which it raises. I would venture to suggest the comparison, in future cases, of changes in the blood—spontaneous or the result of treatment—with the retrograde changes in the organs which are regarded as the source of the corpuscles, as likely to throw light on the pathology of the disease and the *rationale* of its treatment.

XI.—*A Case of Hodgkin's Disease, with Increase in the number of White Blood-corpuscles, treated with Phosphorus.* By W. S. Greenfield, M.D. *Read November* 24, 1876.

On May 9 of the present year I was asked to see a young woman, 26 years of age, who was said to be suffering from menstrual derangement.

Her history, so far as I could gather, was as follows:—She had never been strong, but had not suffered from any special disease. From an early age (how long I could not precisely ascertain) she had been subject to some swelling of the glands of the neck, which had at some time been painted with iodine. Neither the patient nor her friends could give any precise account beyond this, the swellings having been deemed of no importance. Two years ago she was under treatment as an out-patient at St. Bartholomew's Hospital, under the care of Dr. Dyce Duckworth, and complained, she

* A case in which slight albuminuria appeared while phosphorus was being taken, and ceased when the phosphorus was discontinued, has been recorded by the late Dr. Anstie.

said, at that time of swelling under the ears, accompanied by pain. (Dr. Duckworth has kindly taken the trouble to look up the notes of the case. The plaintiff was complaining of amenorrhœa, and was under treatment for some time for that symptom. No glandular enlargement was noticed or complained of.) Since that time until three or four months ago she had not suffered any inconvenience from the swellings, and, though not in good health, did not notice any special symptoms, until increasing weakness and amenorrhœa led her to seek advice.

When I first saw her I found her in bed, too weak to get about. She was greatly emaciated, and her skin of slightly brownish tint, though very anæmic. On the right side of the neck was a very noticeable glandular swelling, rendered more evident by her great emaciation. This mass of enlarged glands was situated in the upper part of the neck, extending from the ear as low as the angle of the jaw in the anterior triangle, and also passing backwards beneath the sternomastoid, which was stretched over it. Behind the sternomastoid there was a chain of enlarged glands, some feeling the size of large almonds, reaching down to the clavicle. In the corresponding situation on the left side the glands were also enlarged, though much less so than on the right, and only in the upper part of the neck did they give rise to any notable prominence. In the right axilla the glands were felt to be enlarged, and there was one small distinct tumour due to coalescent glands. In both groins the glands were also perceptibly enlarged and hard, but the swelling was not great.

The tongue was clean; bowels regular; there was some pain on taking food, and she suffered from flatulence and pyrosis.

On examining the splenic region there was a good deal of tenderness on percussion and palpation, but whether from the stomach or the spleen seemed doubtful. The splenic dulness appeared to measure nearly 5 inches vertically and 4 inches laterally, the organ not extending, however, to the margin of the ribs.

Apart from the dyspeptic disturbance, she complained chiefly of curious attacks of pain and faintness; they were preceded by pulsation in the right side of the neck; then she became half-unconscious, and unable to speak for a few moments. At the same time the breathing became laboured, and she felt great oppression at the chest, the respiration becoming entirely abdominal. Her mother and sister, who

were both very good observers, confirmed her account, and observed that the pulsation in the neck became visible and very marked before these attacks, and the face was flushed. There were also profuse perspirations, occurring often after these attacks. She also perspired profusely whenever she fell asleep. She sleeps badly, only in snatches during the day and night.

No difficulty in deglutition.

Both pupils somewhat dilated, right larger than left.

Chest everywhere resonant and breath-sounds normal. No cough. Heart-sounds normal.

The catamenia appeared last on Jan. 9. The patient believed that the pain in the abdomen was greater at the times when they should have been present, but there had been no discharge of any kind.

Temperature at 5 P.M., 101° F. Pulse 128, feeble, rapid, and jerking. She was ordered an alkaline mixture containing also bismuth, and a mustard and linseed poultice over the left hypochondriac region. From this time, as I was unable to see her frequently, the patient was attended by Dr. Rogers, of Old Street, who saw her almost daily; and I saw her in consultation with him occasionally.

May 16.—Patient is still very weak, and is emaciating rapidly. She perspires much. For two or three days she has had some cough, and pain in the right side of the chest; and on examination there is some dulness over the lower third of the right lung, with sibilant rhonchus and slight crepitation. There is also slight crepitation at the left base. Almost no expectoration. Is very feverish, and has frequent 'flushings,' with profuse perspiration. The condition of the lungs was considered to be probably the partial collapse and congestive œdema common in fever, with perhaps slight bronchopneumonia; and she was therefore ordered stimulants and such nourishment as she could take, and a poultice over the right side of the chest. The diagnosis being not only clear, but the disease being evidently in rapid progress, it was resolved to try whether phosphorus would exert any influence on its course, no other than palliative measures being deemed possible. She was accordingly ordered $\frac{1}{30}$th of a grain of phosphorus in a pill to be taken three times a day, and this was continued during the following six weeks.

On May 26 I examined the blood drawn from the finger. It was somewhat thin and watery, but the red corpuscles formed rouleaux, though more slowly than natural; they did not tail out or remain separate, as in extreme anæmia. The

blood was subjected to a very careful examination, with the following results:—First, as regards the proportion of white blood-corpuscles, they were obviously in far larger relative number than normal. In a pretty uniform layer of blood examined at once under a No. 10 Hartnack immersion, with No. 3 ocular, about 750 diameters magnifying power, tube not drawn out, a number varying from 16 to 25 were seen in the field at a time, the average of a number of fields being 20. In one field, in which they were scantier than in many others, only 16 white being present, there were about 200 red, and this was about the average number. So that the proportion of white to red may be regarded as perhaps not less than 1 to 15. The white corpuscles in great measure appeared normal, and their amœboid movements when fresh were natural. There were, however, also a number of white corpuscles, which were as small as or even smaller than the red, but which in other respects were like the ordinary ones. In addition to these there were seen a number of more minute highly refractile spherical corpuscles, about half the diameter of a red blood-corpuscle, apparently homogeneous and devoid of a nucleus.. They were obviously not oil-globules, as they were less highly refractile, and after a time they underwent change of form. They were in relatively small number. Staining could not be tried. (I should add that this examination was not made by myself alone, but Dr. Gilbart Smith and Dr. Saundby also examined the blood with me when fresh.)

The enlargement of the glands at this date (May 26) had decidedly increased. For the last ten days the patient has had attacks in which she became suddenly faint, feels as if she were going to die, lies half-unconscious, with her eyes open, and cannot speak for some minutes. These attacks are either preceded or accompanied (more often the former) by a sense of oppression in the upper part of the chest, with great difficulty and oppression of breathing, which becomes abdominal, as before; they last now for some minutes. They are, as before, preceded by strong pulsation in the right carotid, to which the patient points, and not to the tumour, as the place where she says she feels 'a beating.' The face is usually flushed for a few seconds, generally chiefly on the right side, and then becomes very pale. There is occasionally also a deep red limited flush over the right cheek, which comes on suddenly.

The enlargement of the glands has not altered in character. The mass at the upper part of the left side of the neck is now

the size of a small apple; it is lobulated, very hard, slightly tender, and appears to adhere somewhat to the sternomastoid. The enlargement in the right axilla is greatest along the posterior border. In the groins there are now very obviously enlarged and hard glands, which are also tender. The right leg is drawn up, the knee flexed, and she says she cannot straighten it.

Much thirst; drinks freely. There is usually a feverish attack about 4 P.M., followed by profuse perspiration. The temperature taken occasionally has been from 101° to 101·5° each time.

May 29, 2.30 P.M.—Feels weaker; still perspires much, but not at the present moment. Temp. now 99·8°. Pulse 120, weak, not obviously dicrotous. The glands on the left side of the neck are more obviously enlarged than before, and are slightly tender; the patient has had pain and palpitation in them and on this side of the neck. There is a more constant oppression of breathing, but the paroxysmal attacks have ceased. The enlargement of glands in the right groin is very marked; at and just above Poupart's ligament is a mass of glands, some of which are the size of a walnut. The right knee still flexed; the patient cannot straighten it, and attempts to move it for her cause great pain. The knee is somewhat swollen. There is considerable tenderness over the front of the chest, the amount of resonance being, therefore, with difficulty determinable, but there seems to be some increase of dulness over the upper part of the sternum. Some bronchitic râles over front of chest.

June 7.—Is in much the same condition, and extremely weak. She complains greatly of the pain and discomfort from the right leg, which is now more drawn up than before, the heel touching the buttock. The knee appears swollen, and is somewhat painful. The leg can only be extended (by passive movement) very slightly, and this causes great pain. There are now slight bed-sores over the sacrum and the right hip. The swelling on the left side of the neck appears decidedly smaller. The patient's mother says that it becomes larger at times during the attacks of 'flushing,' as she calls them. During the past week there have been repeated feverish attacks, marked by shivering, followed by flushing of the skin, a sensation of great heat, and then much thirst and profuse perspiration. It is during these attacks that the increase in size of the swelling in the neck occurs, and at the same time there is a sense of oppression in the upper part of

the chest and great dyspnœa. Tongue slightly coated; bowels open. Pulse 144, full, rapid, jerking; temp. at 12 noon, 102·5°. During the past week the temp. has varied from 99° to 104°, but has been taken only morning and evening, and has been usually from 100° to 103°. Some bronchitic râles in front of chest. Back not examined. She was ordered a water-bed, and an attempt was made to relieve the painful flexion of the leg by extension by means of a light weight and pulley.

13.—(Patient seen on June 11. No marked change.) There is now some epigastric pain and a good deal of tenderness over the stomach; and also some tenderness over the splenic region. Tongue slightly furred. The breath is now constantly short. Chest normally resonant in front; respiratory sounds generally clear, with occasional sibilant râles. The patient is unwilling to be disturbed, and is very prostrate; the back, therefore, not examined. Heart-sounds normal; no *bruit de diable.* The mass of enlarged glands in the right axilla is much larger, forming a tumour the size of an orange; it is also tender. There is no pain down the arm, which is not swollen.

16.—Much the same; very prostrate.

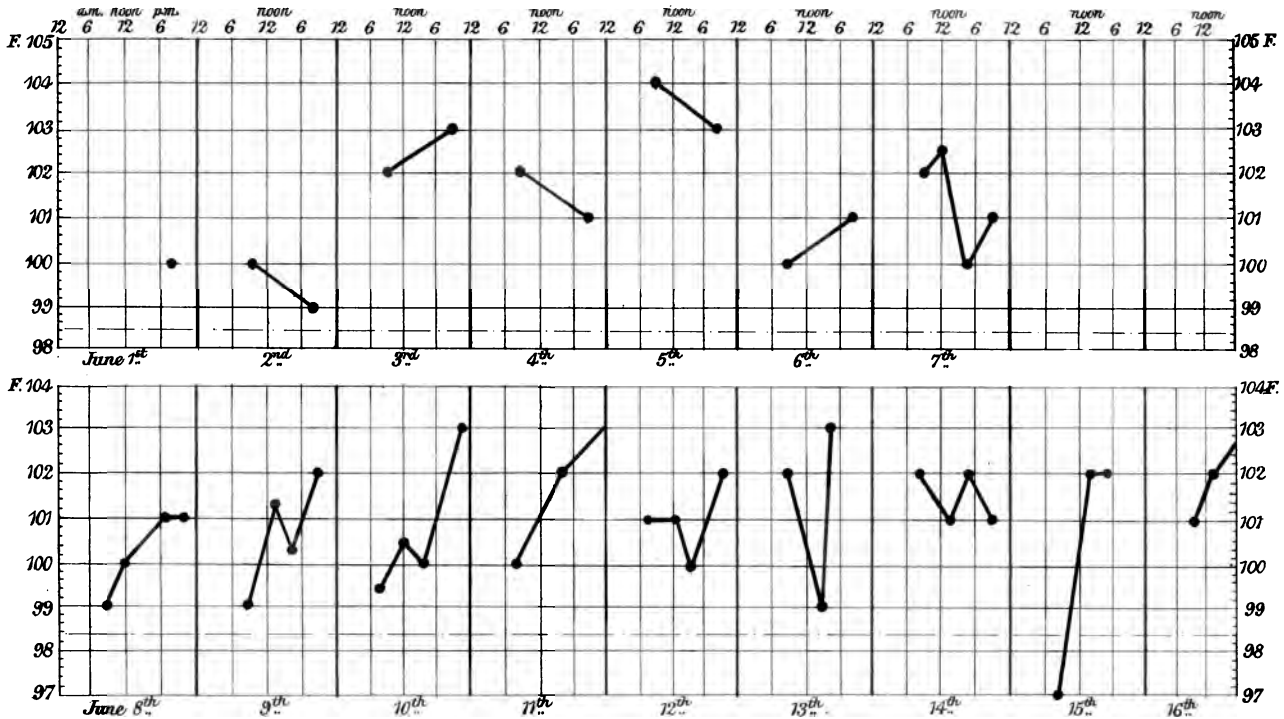
20.—Is much weaker. Has had frequent attacks of shivering, and for the last three or four days the temperature has been from 104° to 105°, each evening, and the perspirations have been very profuse. She was last seen on Friday, the 16th; on the 17th she complained of pain in the right side, especially in breathing, which has continued ever since, and she cannot lie on the left side. For the last two or three days she has also complained of pain in the left breast, and there is now to be felt, just above the breast, a nodule which feels like an enlarged gland, situated rather deep beneath the skin, and which is very tender. The swelling on the left side of the neck is smaller and less painful; that on the right is fully as large, and is tender when touched. Pulse 140, very small and weak. Appetite bad, tongue slightly furred, mouth dry, much pyrosis. (The patient too weak to move to examine chest.)

July 6.—(I had not been able to see the patient for three weeks, on account of an accident.) The patient is said to have been 'better and worse;' on the whole, in much the same condition, with the exception that on the 2nd, 3rd, and 5th inst., when the evening temperature was from 104° to 105°, she has had repeated vomiting, which has not occurred

CHART OF TEMPERATURE.

Name and Age of Patient. *Elizabeth S.* *æt. 26.* **N°. 1.**

Nature of Disease. *Hodgkin's Disease*



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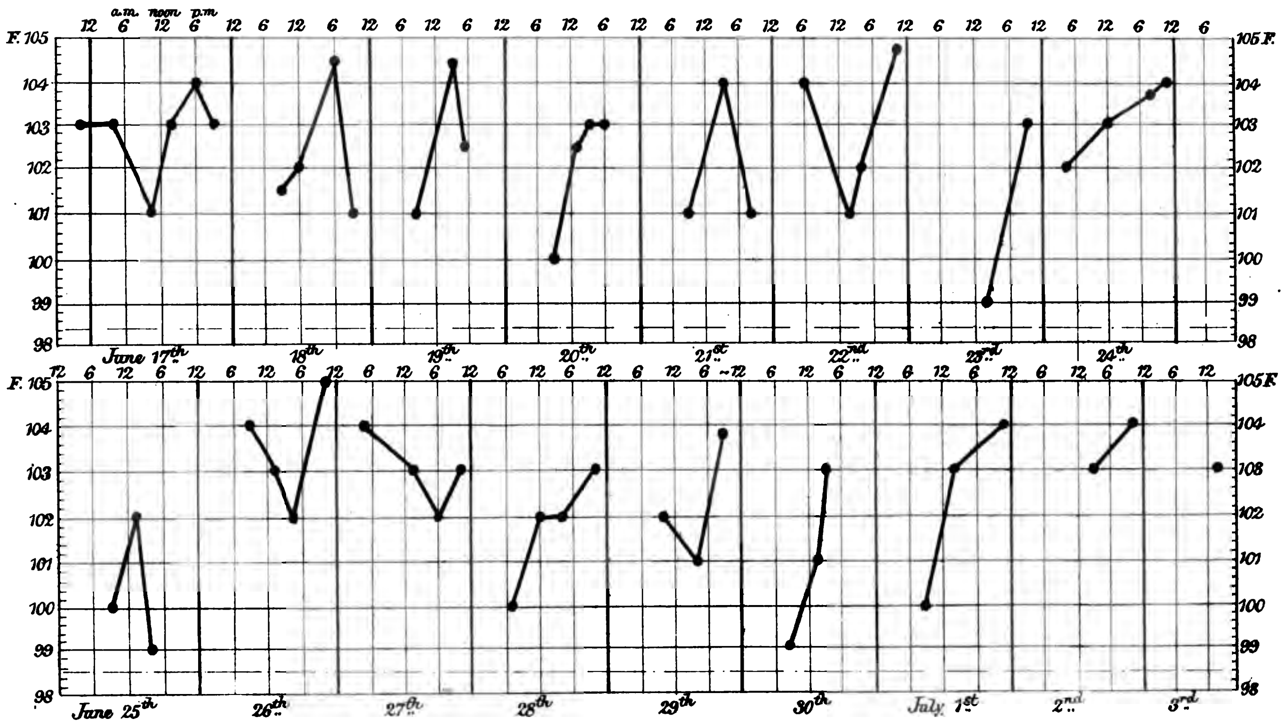

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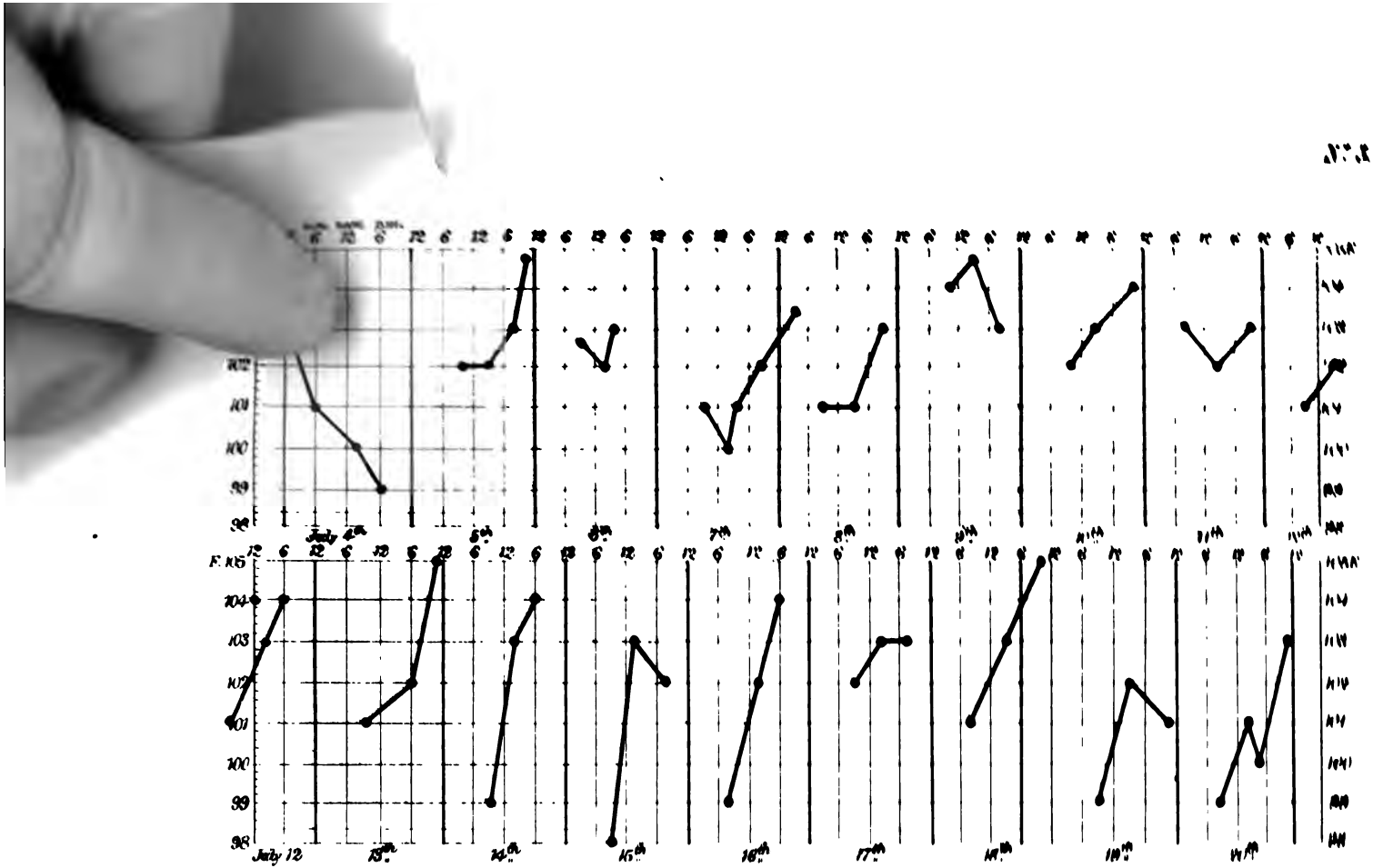
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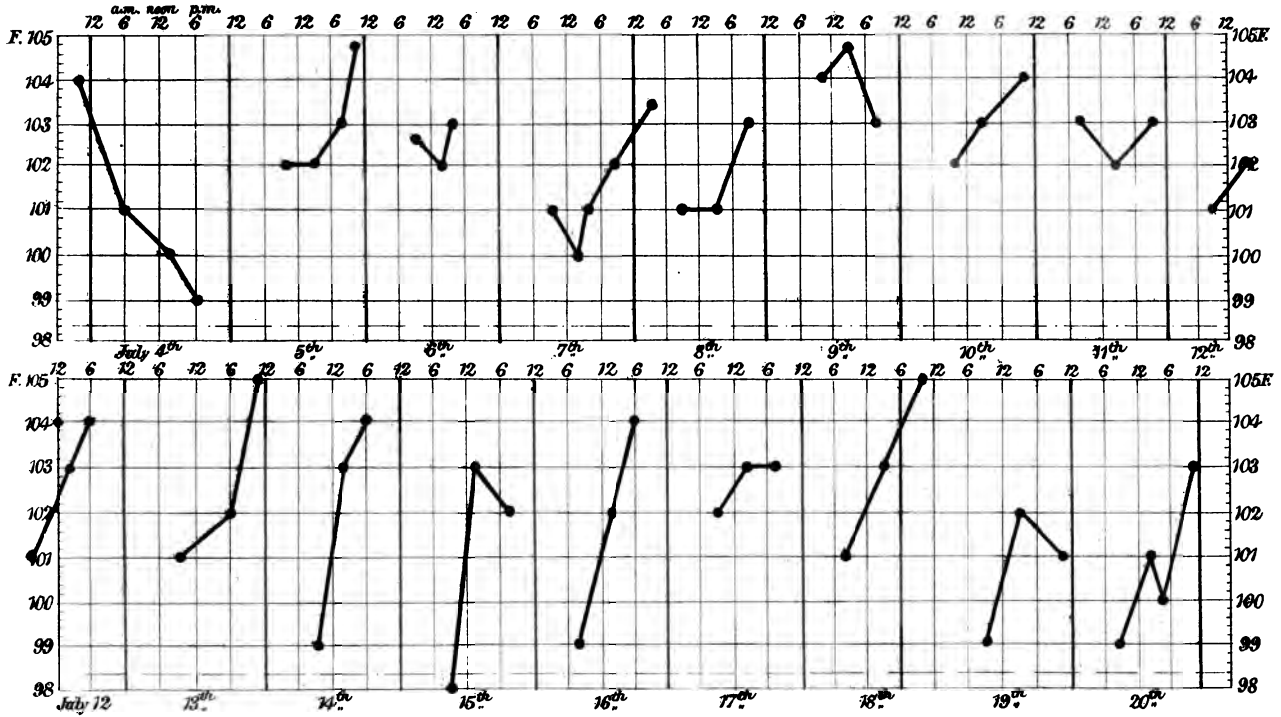
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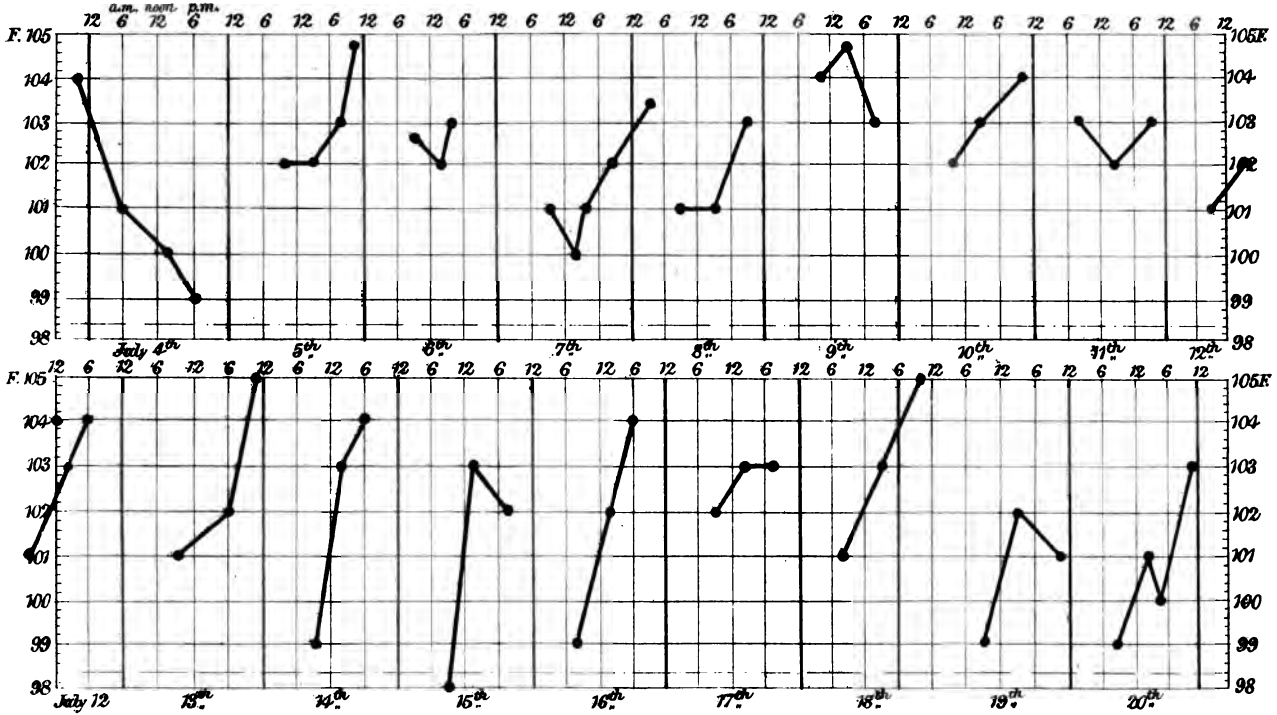
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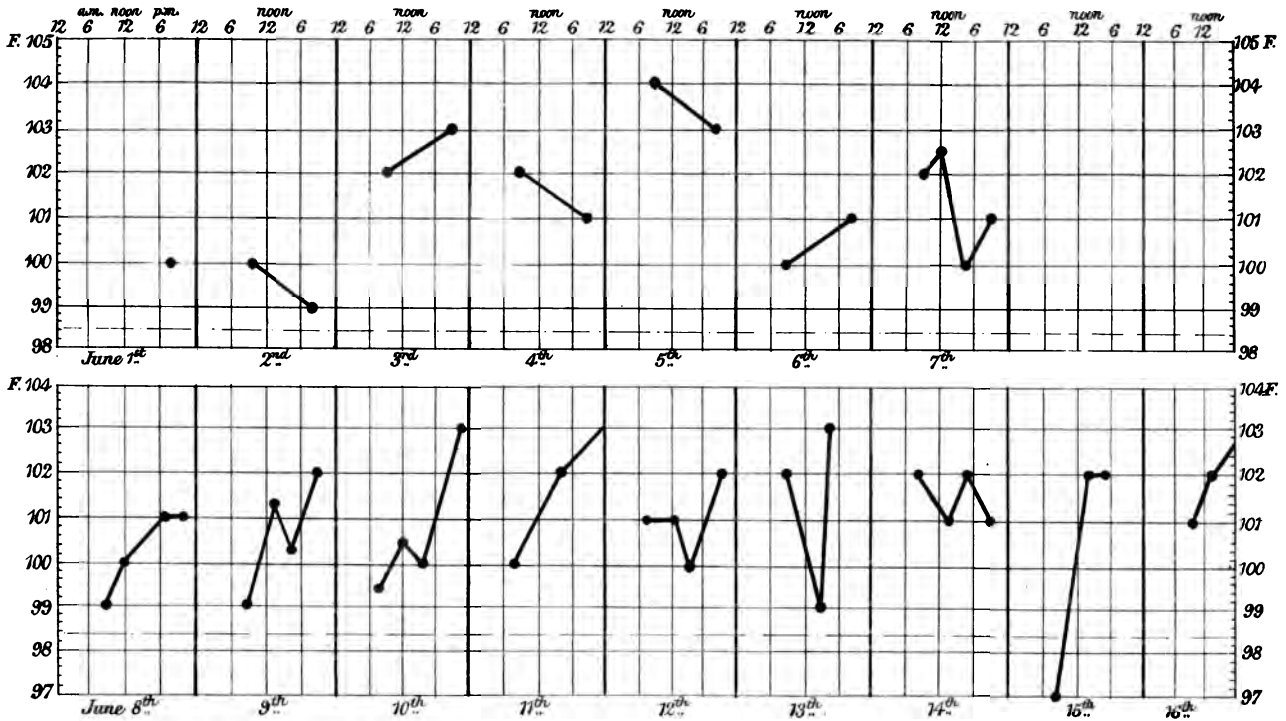
CHART OF TEMPERATURE.

Name and Age of Patient. *Elizabeth S.* *aet. 26.* **N°. 1.**

Nature of Disease. *Hodgkin's Disease*



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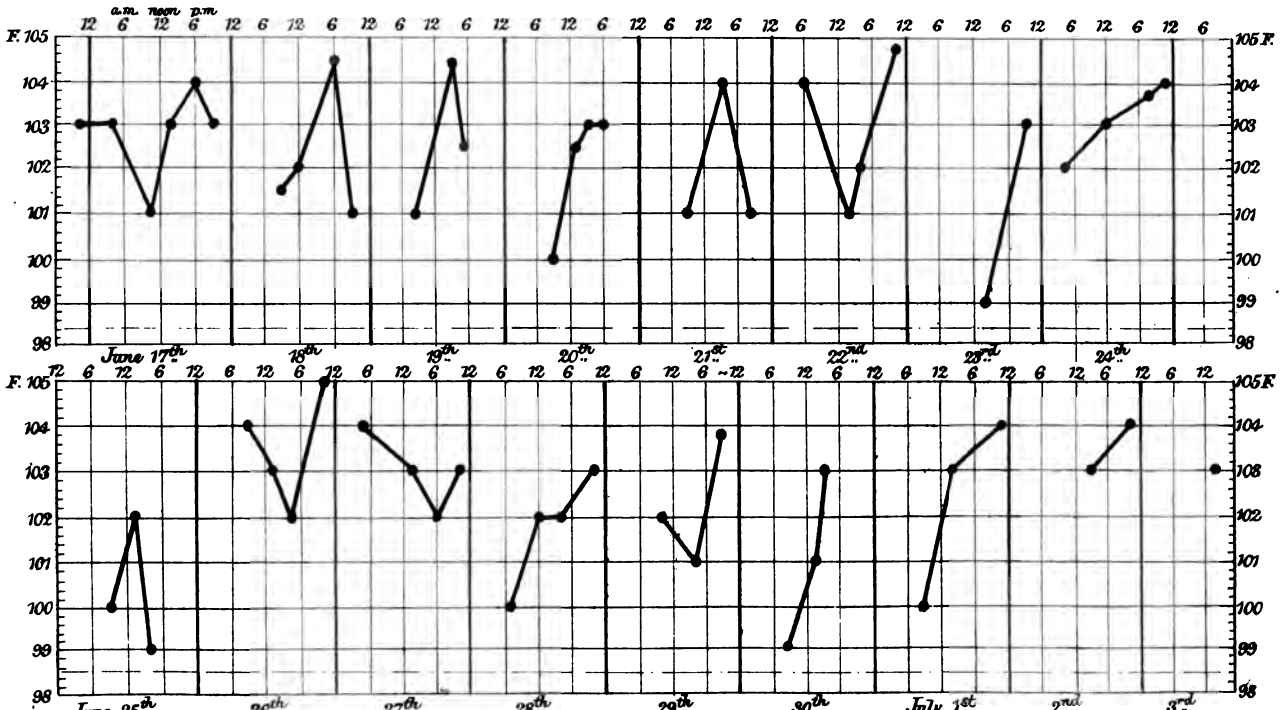
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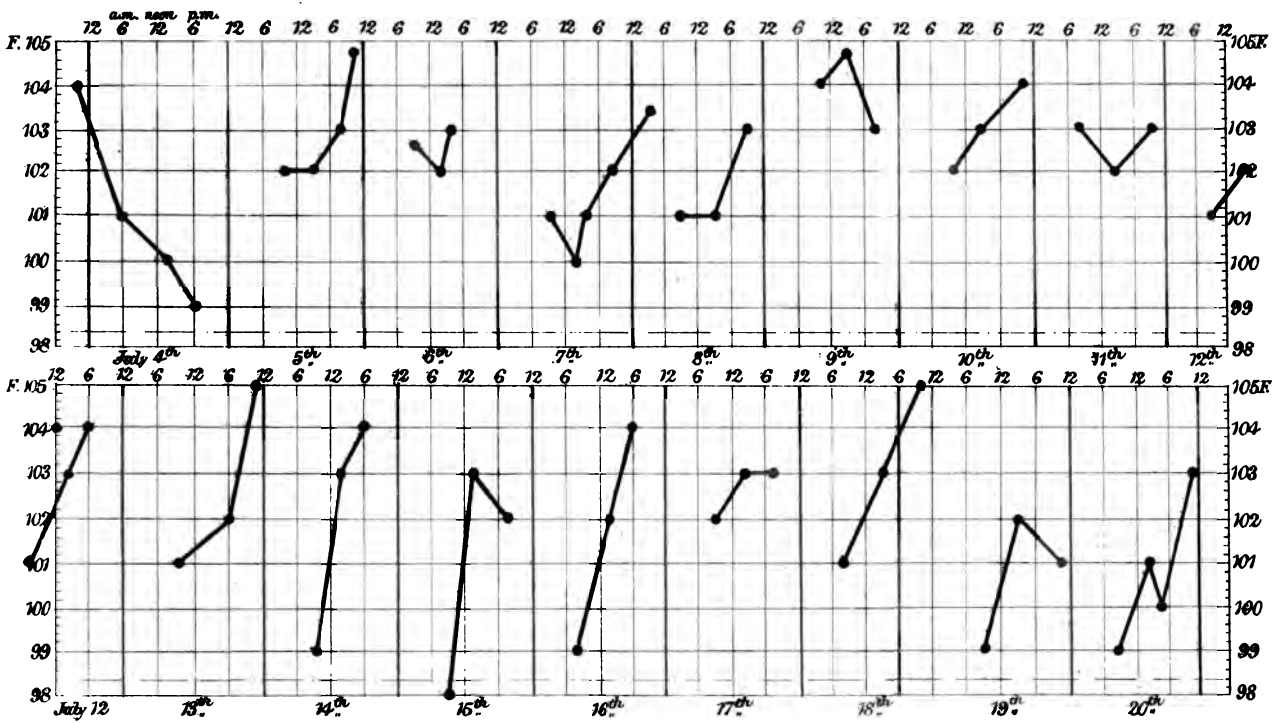
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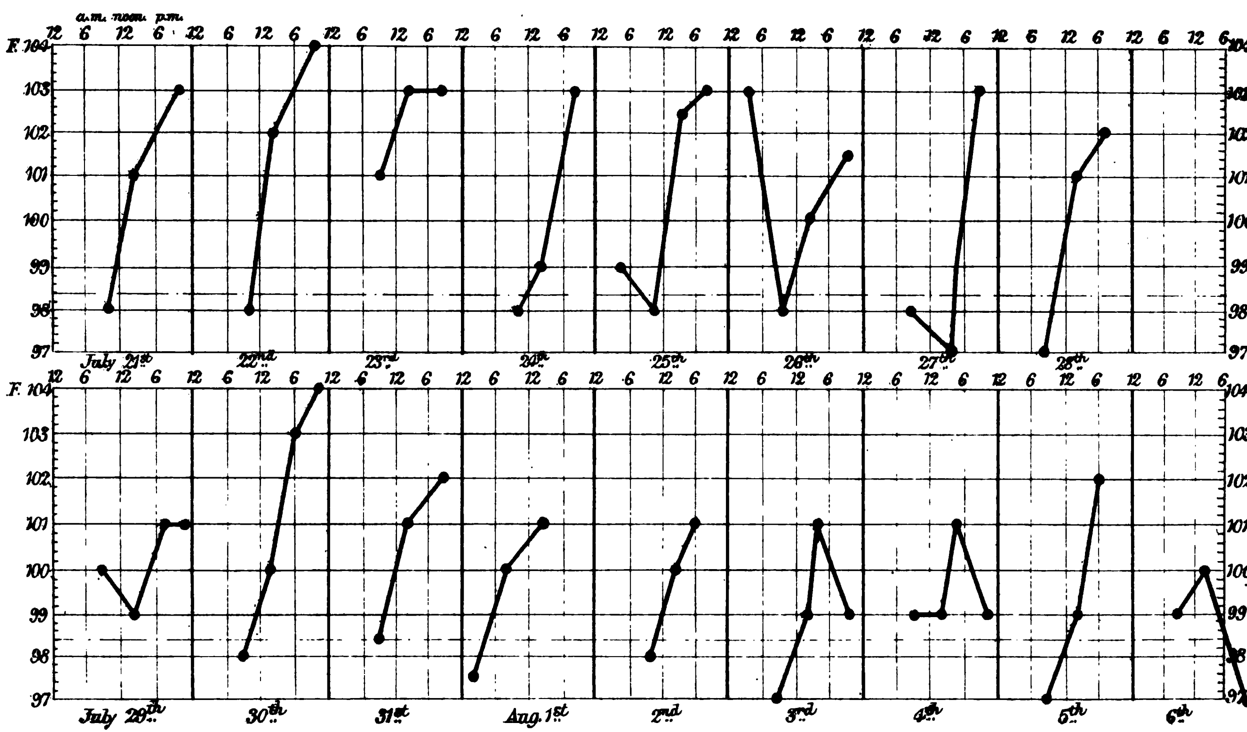
18th
19th
20th

No. 4.


a.m. noon p.m.
F. 104
103
102
101
100
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July 21st
22nd
23rd
24th
25th
26th
27th
28th
July 29th
30th
31st
Aug. 1st
2nd
3rd
4th
5th
6th

solely in the evening. She is now very prostrate, obviously more emaciated. The glands in the neck, axilla, and groins are decidedly larger and are more painful and tender. There is now a swelling in the left breast close to the nipple, that just above the breast persisting as before. No enlargement of the spleen is to be detected either by percussion or palpation. The stomach appears to be considerably distended. The patient drinks freely milk with lime-water and barley-water. The fluid vomited is yellowish and watery, very offensive in odour (from the description it is mainly gastric fluid). She has had frequent shiverings, especially at night, followed by 'violent fever;' the temperature has not been taken later than 11 P.M., when it has been 104° to 105°, or a little over. There has been occasional dyspnœa, but it has been much less marked than before.

The phosphorus was discontinued at the beginning of July, having been taken regularly for six weeks, but no effect on the swellings being observed.

I was unfortunately unable to see the patient again (on account of my own illness). She was, however, attended regularly by Dr. Rogers, and Dr. Casley saw her once or twice in my stead. So far as her general symptoms were concerned there was but little alteration until her death on August 8, about a month after my last visit. The temperature, until about July 15, continued to rule high, though very irregular, but after that time lower temperatures were more frequently observed, the evening temperature continuing from 103° to 104° till near the end of month. (*See* Chart.) In the last week of her life it was only once observed to be over 101°, and was often 97° or 98°. Sickness occurred occasionally, and from July 23 to 25 there was diarrhœa. The dyspnœa recurred about the 17th, ten days after I saw her last, and there were repeated attacks of great difficulty of breathing noted until three or four days before her death. A remarkable fact was that her sister observed that several of the glandular swellings diminished in size and then entirely disappeared, and their disappearance was confirmed by the post-mortem.

The post-mortem examination was made by Dr. Casley on August 9, 39 hours after death. The weather was extremely hot, and the body in a state of advanced decomposition, so that it was not a very satisfactory examination. The skin of the trunk and upper extremities was green and

emphysematous, the abdomen distended with gas. Epidermis peeling off.

There was no swelling of the legs, and the tumours, with the exception of that in the right parotid region, which appeared as a large flat swelling, and a few small enlarged glands on the left posterior cervical region, had disappeared.

In the anterior mediastinum were three slightly enlarged glands, varying in size from a bean to an almond, the largest being deeply imbedded in the sixth left intercostal space. The pleuræ and pericardium contained some reddish serous fluid (probably due to post-mortem transudation). The heart, which was small, appeared like the other internal organs, to have undergone post-mortem softening, but was otherwise normal.

Lungs.—Some firm adhesions at apex, and a few soft ones at base of left lung. Each lung contained at the apex a few nodules, varying in size from that of a pea to that of a small hazel nut, which when cut into differed but little in colour from the surrounding lung-tissue. Portions of this condensed lung readily sunk in water. Bronchial glands much hypertrophied about the roots of the lungs and in the posterior mediastinum, and some enlarged hard glands situated at the bifurcation of the trachea pressed on the left bronchus, which was somewhat flattened.

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Abdomen.—Intestines much distended with gas. *Liver* rather small, but corresponding in size to that of the subject. On the upper surface, near the anterior edge, were two small white masses the size of a pea and almond respectively.

Mesenteric glands much enlarged, and a mass of enlarged gland just below the situation of the receptaculum chyli. The thoracic duct was not traced out.

Intestines not examined.

Spleen somewhat but not much enlarged, measuring 4½ in. by 3 in., and about 1 in. thick, much decomposed, soft; no obvious new growth.

Kidneys apparently normal.

Roughly speaking, then, the post-mortem showed only a mass of enlarged glands in the right parotid region, considerable enlargement of the glands in the mediastinum, especially around the roots of the lungs, and of the lumbar and mesenteric glands, some small masses of new growth in the liver and probably also in the lung. There was a notable absence of affection of the spleen, so far as could be judged in the condition in which it was found.

The microscopical examination of the nodules in the liver, and of the enlarged mediastinal glands, showed the structure of the nodules to be exactly like that of the glands, resembling an indurated lymphatic gland. There was no sign of caseation.

Remarks.—I have called this case one of 'Hodgkin's disease,' using the term, not in its original and more strictly anatomical sense, as a synonym for lymphadenoma, but rather as the English equivalent of Trousseau's *adénie*, used as a clinical and not as a pathological term. Clinically the case appeared to me a very typical one of the disease so described, although it may require some justification from the point of view of morbid anatomy. Here is a girl in fair health, though not strong, who has had some glandular enlargement in the neck which has given her but little trouble, and is regarded by those who see her as a simple chronic adenitis, who at a certain period begins to lose strength, to suffer from pyrexia; coincidently with this the glandular swelling increases in size, and other swellings appear, which rapidly become generalised; great anæmia, irregular fever, and consequent prostration and emaciation occur; other symptoms due for the most part to enlargement of glands, causing pressure on important organs, also come in, and the patient gradually sinks, the glandular enlargement persisting to a large degree in spite of the great emaciation. Clinically, then, the case seemed to me to be a typical one.

Against this view of the nature of the case two facts may be suggested as rendering it doubtful. Firstly, the observation that the white blood-corpuscles were increased in number; and secondly, that the condition of the spleen was not that which may be regarded as typical of Hodgkin's disease.

As regards the first objection, I certainly hesitate to characterise the case as one of leucocythæmia, looking at it from a clinical point of view. It is true that it might be placed in Virchow's class of *leukæmia lymphatica*, if the increase in the number of leucocytes is of sufficient importance. I hesitated, however, to base an opinion on one examination only of the blood, nor did I consider that the amount of increase was sufficiently great to form an essential feature in the case. There were none of the symptoms ordinarily associated with leucocythæmia, no epistaxis or other hæmorrhage, and the whole course of the case was quite different from that in typical cases of that disease. I was, too, under the impression that an apparent increase in the number of white corpuscles

might be due to disproportionate waste of the red, consequent upon the continued fever. But an examination of the blood of patients suffering from severe anæmia, with or without high temperature, performed in the same manner, has led me to modify that view. Not to detail particulars, I may state that the highest proportion was observed in two cases of great anæmia with continued high temperature (one rheumatic pericarditis, the other an anomalous case of something like chronic pyæmia), and in these the highest proportion was 1 white to 40 red, estimated in the same manner. Nor were there in any of the cases examined such variety in the size and shape of the leucocytes, especially so in any small, nor were any 'microcytes' observed, as was here the case. So far, then, the observation is in accordance with Virchow's statements as to *leukæmia lymphatica*. But whilst the observation is of interest in this respect, it does not appear of material importance so far as this patient is concerned.

I would also draw especial attention to the smaller corpuscles found in the blood, which are identical with those described by Eichhorst as occurring in 'pernicious anæmia,' and considered by him to be pathognomonic of that affection. That they are not peculiar to that disease is shown by this case; and in some other cases of Hodgkin's disease I have seen them in greater abundance.

As regards the condition of the spleen I cannot but regret that it could not be examined under more favourable conditions before it had become so much decomposed.

Dr. Wilks, in his valuable and original papers on Hodgkin's disease, lays great stress on the peculiar condition of the spleen, which he seems to regard as one of the essential factors in the morbid condition. But, whilst fully admitting its frequency and importance, and the essential peculiarity of the typical condition, I do not think it possible to exclude cases from this class in which the spleen does not conform to his definition, but where in all other features, both clinical and anatomical, there is a complete resemblance. The condition to which I refer is that in which the spleen, usually enlarged and firmer than natural, presents scattered throughout its substance small masses of various size and irregular shape, of straw-colour, on a ground of deep red or chocolate, the paler patches being very aptly compared by Dr. Wilks to 'lumps of suet' in appearance. Such patches are either scattered abundantly throughout the whole organ, or may be found in only limited regions, where, indeed, they may be con-

fluent into large tumours. In whatever histological element they may originate, they are in their structure essentially identical with lymphatic new growths, and, like chronically irritated lymphatic glands, they undergo fibrous induration. But this condition of the spleen, though very typical and characteristic where it occurs, is not found in every case. Dr. Wilks has himself recorded one case (vol. xiii. 'Pathological Society's Transactions') where the spleen appeared healthy. Out of five other cases which I have examined *post mortem* in only two was this typical condition observed. In the other three the condition of the spleen was, in one, great enlargement of uniform character, with, microscopically, enormous increase in the splenic pulp; in another, also great enlargement, but apparently a simple hypertrophy of all the elements; in the third there were some large white nodules, but not the smaller ones. I need not say that I exclude entirely from consideration cases of lymphadenoma which run the course of cancer, and would, without the aid of the microscope, be indistinguishable from it, both in symptoms and morbid appearances. It seems that the peculiar condition of the spleen is due to an infective overgrowth occurring secondarily to the glandular affection, and that its frequent implication is due to its peculiar relations with the blood, owing to which it is far more liable to infection than any other organ. But since it seems to be secondary, not primary, as the affection in leucocythæma splenica appears to be, it can hardly be essential; the spleen may escape marked implication, whilst the liver, as in the present case, may be affected.

Leaving, then, the subject of the pathology of the disease, I would refer briefly to one or two of the more important clinical features of the case.

Amongst the more notable symptoms, and, indeed, that which caused most distress to the patient at the earliest period after I saw her, was the occurrence of the peculiar attacks of sudden pallor, with a sensation as if death were imminent; sometimes for a few seconds almost loss of consciousness, the respiration becoming entirely abdominal and very laboured. Just before these attacks the right side of the neck was observed to pulsate, apparently mainly the carotid, and the right side of the face became flushed. The right pupil was also on one or two occasions observed to be larger than the left, though not *during* the attack. I was at first inclined to believe these attacks to be of dyspeptic origin, but subsequent observation convinced me that they were

dependent on some functional nervous derangement—in all probability due to nerve-pressure. It will be noticed that after a time these attacks of dyspnœa entirely ceased, and there was comparative freedom from them for some little time; then the difficulty of breathing recurred, and was of the nature of a constant oppression, due, no doubt, as the autopsy proved, to the direct pressure on the bifurcation of the trachea and on the bronchi by the enlarged glands.

Another very marked symptom was afforded by the repeated attacks of fever, of intermittent type, which appeared often to coincide with enlargement of the glands, which sometimes increased in size considerably, and then to a certain degree subsided—on the whole, however, during the time I saw her, growing larger. A question of great interest as regards the pathology of the disease is what relation this fever bears to the glandular enlargement. Is the fever merely symptomatic of an inflammatory condition of the glands; or is it, however produced, the cause of determination of blood to the glands, and consequent increase of swelling? Or, lastly, is it the result of a diffusion of something into the blood from the glands, giving rise to the phenomena of rigor, elevation of temperature, and, indeed, a condition of things not unlike that of an ague fit? Trousseau lays it down very decidedly that there is no inflammation of the glands; but in all the cases which I have examined the glands in the earlier stages of enlargement have been extremely vascular, and have presented an appearance almost indistinguishable from that of acute inflammation. I would add that the glands in this case became tender and painful at these times. For my own part, although to detail fully the grounds on which that opinion rests would occupy too much space, I am inclined to entertain the opinion that the third hypothesis is the correct one, and that the sudden febrile attacks depend mainly on the influx of elements into the blood from the glands, and that they are analogous to those in pyæmia and ague.

Attacks similar to these, and of a very pronounced character, have been observed in several recorded cases. Dr. Murchison has recorded a case in a girl, six years of age, who for some time had feverish attacks, occurring about every four weeks, and 'lumps' were noticed on the neck, axillæ, and groins during the first paroxysm of fever, and with each attack of fever the swellings were observed to increase and become tender. On the cessation of the fever there was always some diminution of the swelling and tenderness, but on the whole

there was an increase in their size. In that case the temperature was very irregular—104° in morning, 104·8° evening, to 99°, 100°, &c. ('Path. Trans.,' vol. xxi., p. 375.) He mentions another case of a girl, æt. 18, who had similar attacks.

In a case reported in the Transactions of the Pathological Society (vol. xxiii., p. 224) by Dr. Squire and Dr. Payne, a febrile condition corresponding in many respects to that in the present case was observed. The case, to which I can only now refer cursorily, also resembled the present in several other particulars. An excess of white blood-corpuscles was discovered during the last six months of life; the glandular swellings diminished greatly some little time before death, and at the post-mortem one of the glands was found in a condition of induration; and there was, too, drawing up of the legs, apparently closely resembling that observed in the present case. This peculiar course of fever is not, however, that found in all cases, even when the temperature is high. In a case (of which I hand round the chart, for the sake of comparison) where very high temperature occurred from time to time, the attacks of fever lasted for some days, during which time the glands were obviously enlarged and more tender, and the dyspnœa consequent on the pressure by enlarged mediastinal glands was greatly augmented. I mention these facts mainly in order to direct attention to the subject of the temperature, which seems to require further investigation. In a case recently under Dr. Murchison's care there was scarcely any rise above 100·6° during the last two months of life, but the temperature was taken only morning and evening; so that in respect of temperature the present case seems somewhat exceptional.

With regard to the treatment adopted I have but little to say. The ordinary remedies suited to the various symptoms and complications as they arose were employed, and I need not waste time by detailing them. Only two drugs were given with any idea of arresting the course of the disease—viz., phosphorus and quinine.

I was not aware that phosphorus had been used in any case of Hodgkin's disease before, but, struck with its remarkable effects in the cases in which it had been employed in leucocythæmia by Dr. Broadbent and Dr. Wilson Fox, I thought it would be well to try it in a disease which, though it may be quite distinct, yet has a very similar basis, so far as the tissue-elements are concerned, and which many regard

as only another form of the same affection. I may add that I decided to try it as soon as the diagnosis was clear, and nearly a fortnight before the examination of the blood. We decided to begin with a small dose, $\frac{1}{30}$th of a grain, three times daily, and gradually to increase it. I was under the impression that it was so increased, but, owing to some misapprehension, it was not, the dose continuing the same for the six weeks it was taken, from May 16 to June 30. At the same time it must be observed that this dose is the same as that given by Dr. Wilson Fox in his successful case of splenic leucocythæmia. (*Lancet*, July 7, 1875.)

I do not know how much good may be thought to have been done by this. It will be urged that the swellings greatly diminished and some of them disappeared, and that certainly the spleen was small, and may have become so after having been enlarged. So far as the glands are concerned I am not myself convinced of the benefit, as I had occasion to observe a similar diminution and disappearance of the swellings in a case in which no phosphorus was given. ('Path. Trans.,' vol. xxvii., p. 275.)

It will be seen by the temperature charts that during the whole period that phosphorus was taken there was no perceptible diminution of the temperature, and the swelling of of the glands pursued its course unchecked; so that I do not think that the drug acted beneficially in this case.

I should not, however, be deterred from employing it in another case, though I should anticipate more benefit where there was less fever, and the disease slower and less virulent in its course. It may, too, be an important question whether phosphorus acts directly on the lymphatic glands, or whether its main action is upon the blood and the spleen. If it could be given otherwise than by the mouth, it would, I believe, be a great advantage, as it seems to lead to gastric disturbance.

Quinine was also given for some time at intervals, in doses of $1\frac{1}{2}$ grains *ter die*, with dilute phosphoric or sulphuric acids, the object being to check the fever and the profuse perspiration and sustain the patient's strength. It seemed to have no effect upon the temperatures.

XII.—*A Case of Hodgkin's Disease.* By J. F. Goodhart, M.D. *Read November* 24, 1876.

SARAH D., æt. 45, a married woman, but without family, was admitted to Guy's Hospital on June 7, 1876, under the care of Dr. Pavy. She appears to have lived quietly, and done no hard work. She has never been pregnant. Menstruation ceased two years ago. Her family history shows no weak point. She knows no rheumatism or gout among her relations, and, except that one sister believes herself to be in a decline, she knows nothing detrimental. She herself had three attacks of rheumatic fever when about 17 years old—all came within a year—and since then she has been considerably troubled with rheumatic pains, though she has never been laid up again with acute rheumatism. Since that time, too, she has always been weak at her heart, and she has had a sense of great weight in that region. Of late years she has had chronic bronchitis rather frequently. Six years ago she had inflammation of the kidneys, without dropsy; was ill many weeks, and in bed. Her urine was scanty at that time, and frequently passed, but she noticed no blood with it. Her habits appear to have been temperate, beer being her only drink. She had been weakly for some time, but dates the commencement of her illness some twenty months back, when she had what was called a boil on the inner side of her left thigh, which has left a small scar. This was opened, and bled, she says, a very large quantity; and, in addition to that, she had leeches applied to her leg, from which she also bled rather freely. Ever since she has been pale, as at present. Fifteen months ago she was admitted to the Hospital, under Mr. Forster, for fistula in ano. This was operated upon and cured. Nothing peculiar about the case appears to have been noticed at that time. Soon after she got home—about fourteen months ago—she had an attack of dropsy, and this lasted seven months. Indeed, she has never quite recovered this, and in the last month the swelling has increased again, and she has applied for admission.

It should be stated that she knows of no bleeders in her family, and there is no history of any tumour.

She says that twelve months ago the glands in her neck

were very large, also the axillary glands, but that they have subsided again.

On admission she looked very anæmic—a largish white round face, with a slightly yellow tinge. Her appearance was that of a woman who had lost much blood. Hair greyish black. Pupils normal. Lips abnormally pale. Tongue white. Breath of a remarkably sweet smell. She has considerable anasarca of legs. Pulse 128, regular; temp. 98·4°; urine 1012, not albuminous. There is a discharging sinus behind the right ear, the result of an abscess which has come lately. Her chest is fairly formed, and there is good resonance, except at the base. Except for some small mucous crackling at the base, probably dependent upon œdema, there is nothing abnormal. The muscular, nervous, and osseous systems seem normal. The heart beats in the fifth interspace, and there is a loud systolic bruit at the apex. It is heard also at the base, but not behind. The heart's action is regular and quiet. Præcordial dulness normal.

The abdomen is considerably distended and rounded. There is no fluctuation; but on palpation there is much resistance in the upper part, and the edge of the liver can be felt low down. There is also some resistance, and a feeling of ill-defined swelling in the right lumbar region, with resonance over it. The spleen cannot be detected by palpation, but there is some increase of dulness in the splenic region under the ribs. There is no enlargement of the glands in the neck or extremities. The blood is watery-looking, and contains 60 colourless corpuscles to 100 red. The latter are quite healthy-looking in all respects, but the former are very small and granular-looking. The liquor sanguinis contains no excess of granular matter, and, in fact, looks quite normal.

She was ordered at first an ammonia mixture, with spirits of chloroform; and on the 10th, three days after admission, she began with phosphorus, taking $\frac{1}{30}$th of a grain in a pill three times a day. The pill that was ordered is made by dissolving the phosphorus in resin under water.

June 14.—The lump in the abdomen does not appear any more definite. There are to-day about 58 red corpuscles to 42 white. Pulse 120. The patient is, perhaps, less anæmic. The heart is as it was at the former note.

16.—She continues very anæmic, but less so than on admission. The urine is not albuminous; sp. gr., 1014.

17.—The examination of the blood this morning shows fewer colourless corpuscles than before—about 18 in every 100. These are all small in size—smaller than the red, some not more than half the size of the red, but the majority about two-thirds their size. The white cells of large size of normal blood are present in their proper quantity, one or two in a field.

20.—She remains about the same. The splenic dulness is increased, and hardish resistance is felt, but there is no distinct tumour. The blood is watery, and contains about 28 per cent. of colourless corpuscles. To-day they are about natural in size—one-third larger than the red—but some are of the same size, some smaller than the red corpuscles.

23.—The patient says she is much stronger, and she looks less anæmic. The white corpuscles are largely in excess—quite 40 per cent. in the field.

24.—Thirty per cent. of colourless corpuscles. They are about equal in size to the red, if anything rather smaller. The enlargement of liver still remains unaltered.

27.—For some days she has had considerable pain about the rectum and anus. This was due to some clotting in and distension of a hæmorrhoidal vein. There is no tendency to any recurrence of the fistula.

30.—The blood continues to vary much. Sometimes there is a general diminution of all the corpuscles, red and colourless, the latter still remaining proportionately in large excess. Sometimes they are of the large size of the normal white; more usually they are very small. To-day they are of large size, and about 18 per cent. of the red.

July 3.—Blood watery: colourless and coloured corpuscles in about equal proportions. The latter are perhaps in slight excess, but not much. The abdomen is rounded and large. Liver dulness continues to be increased, and the edge of the liver may be felt in the right hypochondrium, nearly as low as the umbilicus. There is a hardish mass in the neighbourhood of the spleen, but it is not certainly spleen. Urine not albuminous. Still much anasarca.

7.—Only 10 per cent. of the colourless corpuscles were noticed, and on the next day when examined they were not in excess at all.

14. The sinus behind the ear continues to discharge freely. The discharge is milky and thin. Has been rather low-spirited lately, and complains much of her heart.

Blood contains 20 per cent. to-day of colourless cor-

puscles. It is very watery, and contains few corpuscles of any sort.

Aug. 3.—Frequent observations have been made since the last note. They all tell the same tale as regards the blood: how it varies in respect of the total number of corpuscles present, in the proportion of the one to the other, and in the size of the colourless corpuscles themselves. The liver is still much enlarged, and there are other less defined masses in the abdomen which strike me as being glandular. The bowels are open daily. There is now some enlargement of the glands in the neck, on the right side more especially.

10.—The cervical glands continue to be enlarged; those on the right side more markedly than on the left, probably in connection with the sinus behind the right ear, which still discharges freely. The pus is thin and ichorous, and bare bone may be felt at the bottom of it. The probe seems to indicate that there is rather extensive disease of the bone.

16. Glands in neck considerably enlarged. There is also enlargement, but not great, of a gland in the right inguinal region, and also of the glands in both axillæ. None of these swellings are visible till they are felt for. The colourless corpuscles are to-day 16 per cent. On the 18th they were only 6 per cent., and on the 21st 35 per cent. again. The blood is examined every other day.

21.—The glands are still much enlarged; if anything they have increased in size, more especially those on the right side of the neck—all the glands seem more or less affected. Those on the right side of the body more than the left, except the inguinal, which reverse this. The blood is to-day watery, corpuscles of any kind few; the white and the red about equal in number. She remains in other ways unaltered. She has taken her phosphorus pill up to the present date, with a mixture of perchloride of iron. It is changed to-day to phosphorus, $\frac{1}{30}$ gr.; strychnine, $\frac{1}{20}$ gr. Ferri. redacti. gr. ii. in pil. i. three times a day. Thus, she took phosphorus three times a day for about three months; and though her general health certainly improved, the leukæmic state remained unaltered, and enlargement of glands went on in spite of the remedy. She now left the Hospital, but returned again on September 5, and since that time has had no more phosphorus. Her general condition is still one of general anasarca and extreme anæmia, of a yellow tint.

The blood is still full of small colourless granular cells—smaller than the red corpuscles, the normal large colourless corpuscles being in proper quantity, but no more—two or three in the field; and the red are unaltered in appearance. Granular material not in excess. The liver remains as large as before, and the abdomen as full. The glands in axilla and right side of the neck and left groin are swollen and tender, but they are not evident, except those regions are examined by the hand. She has had acute pericarditis since her return, and for some time a dark almost prune-juice expectoration, with some dulness and crepitation at the bases of the lungs, indicating pneumonia or some infiltration of the lung by new growth; but all these conditions have cleared up again, and she still remains much as she was on her first admission as regards the abdominal enlargement and pallor, while as to her power to undergo exertion and general health she is certainly improved. The temperature has been taken at various intervals, but has never been found higher than 100°. It is usually normal. Pulse 100 to 120.

At the time this case was before the Society it was still incomplete, the patient being then alive. This being so, it was doubtful whether Hodgkin's disease or lymphatic leukæmia alone existed, or splenic leukæmia, or both forms together. The amount of visible glandular enlargement was not great, but the state of the blood, which showed an excess of very small colourless corpuscles, such as have been described by Virchow as occurring in the lymphatic variety of leukæmia, pointed to this form of disease. The case differed from typical Hodgkin's disease in the large number of these corpuscles which were usually present. The patient was treated by phosphorus for four months, and without any apparent influence on the course of the disease; but it is not so much in the treatment that the point of the case lies as in the variations which the blood went through in the progress of the disease. It raises the question of the clinical significance of white-celled blood. Reported cases show how variable is the condition of the blood in leukæmia; in some the large white splenic cells are found in excess, in some colourless cells of much smaller size; in others the red corpuscles also vary in shape, and perhaps the white are hardly in excess; while in yet others the liquor sanguinis is crowded with granules, and the leucocytes not in excess at all. The importance of this variation in the constituents of the blood is likely to be lost

sight of, because the blood is a fluid tissue; but if the whole blood were imagined as crowded into the space of a single organ, such as the liver, then we might recognise that there is enough difference in the blood-changes classed in common under the term leukæmia to constitute several distinct diseases. Till we are quite sure that this is not so, and that leukæmia is only the *one* disease it is now supposed to be, the discussion of the treatment of leukæmia by any given remedy may only prove to be a futile attempt to compare likenesses when we should be making much of the contrasting differences. For instance, in what do these cases, incurable at present, differ from another class with which those who see much of children's diseases are doubtless familiar, which almost always get well under any treatment? The spleen is large, and the leucocytes are in excess, though neither symptom is extreme. I have seen six such cases in the last two years. The average extent of leukæmia has been forty to sixty leucocytes in the field, where there should have been but four or five. All these were children under two years of age, and they all got better under treatment, some with phosphorus, some with iodide of iron, some with cod-liver oil. But as if to show the close affinity there is between a curable and incurable form of leukæmia, I have had another child ten months old, at first in an apparently similar state as to its spleen, but without any leukæmia; nothing, in fact, to indicate that it would not do as well as the others had done, when, after a time, the white cells increased in quantity in the blood, it was attacked with purpura and died with characteristic morbid appearances in the liver, spleen, and kidneys. From a review of the whole series of cases I am inclined to believe that leukæmia is either a disease of several stages, of which perhaps a form of anæmia rather than leukæmia is the first, and in which state it is mostly remediable, and that the incurable cases are only more advanced, or else that several distinct conditions have become confused from possessing in common one prominent symptom.

Note.—The patient who formed the subject of this communication died in Guy's Hospital, on January 27 of the present year. The post-mortem was made by me thirty-three hours afterwards. There was slight disease of the roof of the tympanum and the mastoid process of the temporal; with this exception the bones of the skeleton were healthy. The brain weighed 43 ounces, and was healthy.

The cervical, mediastinal, and lumbar glands were all about twice their proper size, white, and fleshy. The tonsils were normal. The heart weighed 17 ounces. The aorta above the valves had many small nodules of endarteritis deformans. The aortic valves were thick, but not so as to render them incompetent. The muscular fibre pale and fatty. The blood was thin, but had none of the grumous appearance of ordinary leukæmia.

The liver weighed 89 ounces, was slightly lardaceous, and contained a good deal of lymphoid growth, both around the hepatic venules and in the portal channels.

The intestines were slightly lardaceous throughout.

The spleen weighed 17 ounces, was firm, and showing considerable overgrowth of lymphoid tissue in parts. The kidneys weighed 16½ ounces. They were large and pale, but had not undergone any inflammatory change. The joints were healthy.

With regard to the microscopical appearances in the various organs two changes were chiefly noticeable, particularly in the spleen, liver, and kidney. These were: first, a perfectly well-grown lymphoid tissue, of stroma and cellular elements; secondly, crowding and blocking of the vessels with leucocytes and their extravasation into the surrounding parts. In the liver the changes were almost as much round the hepatic venules as in the portal channels. In addition, the kidney had a considerable thickening of its stroma of a hyaline kind, and the epithelium was in many places in excess in the tubes. The heart showed very little change in its muscular fibre, and no lymphoid tissue-growth, but there was the same blocking of the vessels by leucocytes as was seen in the other organs.

XIII.—*Cases Illustrating the Treatment of Rheumatic Fever and some other Febrile Diseases by Salicin and its Congeners.* *By* HERMANN WEBER, M.D. *Read January* 12, 1877.

THERE is scarcely a remedy which has been so rapidly received into practice as salicin and its congeners, salicylic acid and salicylate of soda. The internal use of the two

latter as antiseptic remedies has been tried in Germany, and has already been relinquished, while their antipyretic effect is pretty generally acknowledged (Buss,* Moeli,† Riess,‡ Jahn,§ Goltdammer,‖ and others), though it is by some observers regarded as inferior to quinine.

The most important use of these remedies, however, as far as our present experience goes, relates to the treatment of rheumatic fever; and, according to Dr. Maclagan,¶ to whom the credit is due of having first used salicin in the treatment of rheumatic fever, this substance, when given in sufficient quantity and at the commencement of the attack, acts like quinine in ague, and is able to prevent the supervention of affections of the heart, and of other complications. Many other observers have more or less corroborated these conclusions. Stricker** was, I think, the first in Germany to claim in a very prominent way almost unlimited power over rheumatic fever for salicylic acid, apparently without knowing of Dr. Maclagan's practice, and certainly before the latter's experience was published. Buss†† and Riess‡‡ had already, in 1875, published remarks about the beneficial effects of salicylic acid in rheumatic fever before Stricker and Maclagan (both in the beginning of 1876), but they (Buss and Riess) attributed these effects principally to the antipyretic action of their remedies, not to any specific influence on the disease in question. Dr. Broadbent§§ seemed to go quite as far as Stricker with regard to the influence of salicylic acid on rheumatic fever in cases treated at St. Mary's Hospital, where Dr. Sieveking ‖‖ was equally successful. Dr. Paul¶¶ communicated favourable results at Liverpool, and many other observers have reported the successful treat-

* Buss, C. E. Ueber Anwendung der Salicylsäure als Antipyreticum. Deutsches Archiv f. Klin. Medicin, vol. xv. p. 457, 1875.

† Moeli, C. Berliner Klin. Wochenschrift, No. 38, 1875; and Deutches Archiv f. Klin. Med., xvii. p. 592; 1876.

‡ Riess, L. Berliner Klin. Wochenschrift, Nos. 50 and 51, 1875.

§ Jahn: Deutsche Militärärztliche Zeitschrift, 1875, Heft 12.

‖ Goltdammer: Berliner Klin. Wochenschrift, 1876, No. 4.

¶ Maclagan: The Treatment of Acute Rheumatism by Salicin. *Lancet*, March 4 and October 28, 1876.

** Stricker: Ueber die Resultate der Behandlung der Polyarthritis Rheumatica mit Salicylsäure. Berl. Klin. Wochenschrift, 1876, Nos. 1 and 2.

†† Buss, D. Archiv f. Kl. Med., vol. xv., 1875.

‡‡ Riess: Berlin. Klin. Wochensch., 1875, Nos. 50 and 51.

§§ Broadbent: *Lancet*, April 8, 1876.

‖‖ Sieveking: *Lancet*, July 1, 1876.

¶¶ Paul: *Med. Times and Gaz.*, Nov. 8, 1876.

ment of single cases. Dr. W. Carter's * report is not so uniformly good. Dr. Jacob published, in the different numbers of the 'Lancet' and 'Medical Times and Gazette' of this year, a large number of cases from the Leeds Infirmary, some of which were successful, while others were failures, and again others of undecided nature, and he ascribes greater curative power to the salicylic acid than to salicin; and Dr. Foster, of Bristol, has likewise not obtained the benefit expected from salicin in a case of rheumatic fever. Dr. Maclagan, in his more recent publications, expresses the view that want of success is due to insufficient doses of the remedy, or to the commencement of the treatment when the disease is already too far advanced, but seems otherwise to regard the remedy as infallible, and at the same time as easily borne and harmless. Dr. Stewart Lockie, however, has recorded a case in the 'Lancet' of July 15, where the treatment was commenced on the fourth day of the disease, and where pericarditis, pneumonia, and fatal hyperpyrexia came on in spite of the salicin treatment, the dose being at first 15 grains every three hours, and later 25 grains; but Dr. Maclagan might say that the intervals between the single doses were too long. Wolffberg † describes the action of salicylic acid as a local irritant, causing not rarely inflammation and ulceration of the mucous membrane, especially when given in the form of powder or emulsion; while neither Maclagan, with salicin, nor Buss, Riess, Stricker, Jahn, Broadbent, Sieveking, and others, with salicylic acid and salicylate of soda, seem to have met with any such serious effects, when the remedies were well prepared. The only inconveniences occasionally mentioned by different authors are irritation of the fauces, nausea, and vomiting, slight deafness, giddiness, and profuse perspiration, and only in very rare instances more serious collapse (Goltdammer) and ulceration of the mucous membrane.

As my own experience is not uniformly satisfactory, I venture to place it before the Clinical Society, with the hope of eliciting further information.

The cases in which I have employed salicin or its congeners are 15 of rheumatic fever, 4 of gonorrhoic rheumatism, 2 of acute gout, 4 of typhoid fever, 2 of ague, 2 of hectic fever in phthisis, 1 of chronic pneumonia, 1 of cynanche tonsillaris, 1 of scarlet fever in the first stage, 1 of polyarthritis scarlatinosa.

* W. Carter. 'Med. Times and Gaz.,' Nov. 8, 1876.

† Deutsches Archiv f. Klin. Med., vol. xvi. p. 162; 1875.

Of the 15 cases of *rheumatic fever*, 8 were treated with (A) *salicin*, 4 with (B) salicylic acid, and 3 with (C) *salicylate of soda.**

A. SALICIN.

Case I.

Mild case of rheumatic fever; treatment commenced on eighth day of disease—viz. 15 grains every hour, later every two hours; convalescence on tenth.

G. P., æt. 16, a youth of delicate appearance, had been seized, after over-exertion in athletic games, with pain and swelling in several joints; came under treatment on the eighth day; right knee and ankle and both elbows were affected; heart sound; perspiration moderate; urine acid, free from albumen, sp. gr. 1020.

8th day, 9 A.M., pulse 108; temp. 102°.—4 P.M., pulse 112; temp. 102·4°. 15 grains of salicin in 1 ounce of water, sweetened with syrup aurant, every hour.—9 P.M., pulse 98; temp. 101°; pain diminished. 15 grains every two hours.

9th day, 9 A.M., pulse 26; temp. 99·8°. General improvement; urine abundant; slight deafness.—6 P.M., pulse 72; temp. 98·5°. Pain and swelling almost entirely removed; had taken 240 grains; continued salicin every three hours.

10th day, convalescent; kept in bed four days; left off salicin on fourteenth day; remained well. The urine in this case gave distinct reaction of salicylic acid three hours after the first dose of salicin (tinct. ferri perchlor.).

Case II.

Mild case of rheumatic fever in a young woman; constantly sick after salicin, while quinine was well borne.

T. A., female, æt. 20; third attack of rheumatic fever; came under treatment on fourth day, with painful swelling of right ankle and left knee; old mitral disease, profuse acid perspiration, neutral urine, sp. gr. 1018, free from albumen.

4th day, 5 P.M., pulse 110; temp. 101·8°. Salicin 15 grains every hour; was sick after third and all subsequent

* The general treatment in all cases of rheumatic fever was the same—viz. absolute rest, with moderately warm covering; light diet, consisting of milk, beef-tea, and to which, later on, eggs and soup were added.

doses; 9 P.M., pulse 105; temp. 100°. No salicylic acid could be detected in the urine by the sesquichloride of iron test.

5th day, 9.30 A.M., pulse 110; temp. 102°. Two fresh joints affected; repeated trials with salicin and salicylic acid, as well on this as on sixth day, always excited vomiting. The treatment was then changed, and quinine, in 5-grain doses, was given three times a day.

Convalescence commenced at the end of third week.

Case III.

Mild case of rheumatic fever in a healthy youth; treatment commenced on fourth day—viz. 10 grains of salicin every hour; convalescence commenced on fifth day.

L. A., a tolerably healthy-looking youth, had an attack of rheumatic fever eight years ago; was then four weeks in bed; on fourth day of the present attack painful swelling of both wrists, left shoulder, and left knee; heart free; perspiration slight; urine rather scanty, sp. gr. 1025, free from albumen.

4th day, 10 A.M., pulse 96; temp. 102·2°. 10 grains of salicin every hour.—4 P.M., pulse 90; temp. 101°.—10 P.M., pulse 84; temp. 98° in axilla; 100° in rectum. Almost free from pain and swelling; profuse perspiration. The sesquichloride of iron test shows distinct reaction of salicylic acid in the urine passed two hours after the beginning of the treatment.

5th day, 9 A.M., pulse 78; temp. 98·4°. Salicin every three hours.—6 P.M., pulse 76; temp. 98·6°. Has taken 250 grains. Continued in bed, with salicin every three hours, for four days more; remained quite well.

Case IV.

Case of rheumatic fever of moderate severity came under observation on the sixth day, but salicin treatment commenced only on the eighth—viz. 15 grains every hour at first, later 25 grains every two hours; apyrexia after two days; relapse on twentieth day; again conquered in three days.

A. D., æt. 24, a man with consumptive family tendency, after fatigue and exposure seized with pain in left foot; came under treatment on the sixth day, with swelling and pain in the left knee and right hand; heart sound; perspiration moderate; urine acid, abundant; sp. gr. 1022.

6th day, 4 P.M., pulse 94; temp. 102°. Rest. Small doses of soda.

7th day, 9 A.M., pulse 98; temp. 101·2°.—6 P.M., pulse 108; temp. 103°. A fresh joint affected.

8th day, 9 A.M., pulse 102; temp. 102·2°. 15 grains of salicin every hour.—4 P.M., pulse 104; temp. 102°.—10 P.M., pulse 94; temp. 101°; pain diminished; 25 grains of salicin every two hours.

9th day, 9 A.M., pulse 88; temp. 100°. Better night.—3 P.M., pulse 92; temp. 100·5°. Perspiration moderate; distinct reaction of salicylic acid in the urine.—9 P.M., pulse 80; temp. 99°. Pain and swelling almost disappeared; perspiration rather abundant.

10th day, 10 A.M., pulse 72; temp. 98°.—6 P.M., pulse 70; temp. 97·8°. 25 grains every four hours; perspiration abundant.

Left off salicin on fourteenth day, after having been quite free from pain for four days; had a fresh attack on twentieth day, being seized with pain and swelling in the left elbow; at 5 P.M., pulse 98; temp. 102°; and after having taken 25 grains of salicin every two hours for three days he was free, but continued the remedy every four hours, and for four days longer, when sickness occurred.

No further relapse.

Case V.

A. S., a male patient, æt. 25, had had rheumatic fever in 1874, when he was ill more than two months; had another attack in June 1876; came under treatment on the fifth day, when both knees were affected; temp. 100·8°; received 15 grains of salicin every two hours; was free from pain and fever 60 hours after the first dose.

Case VI.

Subacute rheumatic fever; salicin treatment commenced on fourteenth day; checked the joint affection in five days; relapse five days later, uninfluenced by 30-grain doses every two hours during again five days, when the treatment had to be changed on account of sickness. Slow recovery under quinine.

D. S., æt. 29, had subacute rheumatic fever, with affection of many joints in succession, the temperature rarely exceeding 100°, the pulse scarcely over 90. Salicin com-

menced on fourteenth day with 10-grain doses, and afterwards 15-grain doses every hour, excepting sleep; phenomena checked after five days, over 600 grains having been consumed. Medicine then given only every three hours; five days later relapse, uninfluenced by increasing the dose to 30 grains every two hours. On the fourth day of the relapse, and fourteenth from commencement of salicin treatment, vomiting came on, and returned after every attempt to give the medicine.

Perspiration always moderate.

Slow recovery under quinine after a further fortnight. The perchloride of iron test indicated only very small quantities of salicylic acid in the urine.

Case VII.

Second attack of rheumatic fever in a man of 24; salicin from the fourth day, 15 grains every two hours, and from the fifth every hour, and 40 grains every two hours from the seventh day. Pericarditis came on during the treatment on seventh day, and increased very rapidly; together with pulse-rate and temperature; delirium on the eighth, when, after the administration of more than 2 ounces in five days salicin was discontinued, and bromide of potassium with quinine and blistering of the pericardial region, were substituted. Convalescence commenced at the end of the fourth week.

M. B., æt. 24, a rather delicately framed man, had suffered from rheumatic fever when 15 years old; had cynanche tonsillaris in the beginning of May 1876; was seized with pain in left knee, and afterwards right wrist; came under treatment on the fourth day of the joint affection, the thirteenth day from the beginning of the throat-affection; heart free; lungs free; perspiration abundant, acid; urine almost neutral.

4th day, 5 P.M., pulse 105; temp. 101·5°. 15 grains of salicin every two hours.

5th day, 9 A.M., pulse 100; temp. 101°. Two fresh joints affected; 15 grains every hour.—4 P.M., pulse 108; temp. 102·2°. Noise in the ears; deafness.

6th day, 8 A.M., pulse 106; temp. 102; 3 P.M., pulse 110; temp. 103°, and 9 P.M., pulse 118; temp. 102·8° Eruption of small red spots on neck and hands, in appear-. ance somewhat between that of measles and that of scarlet fever. Urine abundant.

7th day, 9 A.M., pulse 102; temp. 102.2°. Friction sound near base of heart.—4 P.M., pulse 108; temp. 103°. Joint affection rather diminished.—9 P.M., pulse 128; temp. 103·5°. Eruption continues. Salicin, 40 grains, every two hours. Urine abundant; moderate salicylic acid reaction with perchloride of iron.

8th day, 9 A.M. pulse 124; temp. 103°; and 5 P.M., pulse 128; temp. 103·8°. Considerable fluid effusion into pericardium; apex not perceptible; sounds distant and faint. Delirium and hallucinations. Omit salicin. Blistering fluid over the pericardial region, followed by poultice of linseed meal; ⅓ grain of morphia, with 20 of bromide of potassium at bedtime.

9th day, 8 A.M., pulse 120; temp. 102·5°. Delirium and hallucinations continue.—6 P.M., pulse 105; temp. 101·5°. Quinine, 5 grains; bromide of potassium, 15 grains, every six hours.

10th day, 9 P.M., pulse 100; temp. 100·2°; and 5 P.M., pulse 96; temp. 100·4°. Is more quiet; sleeps occasionally; delirium not quite disappeared.

11th day, 10 A.M., pulse 90; temp. 99.° Eruption disappeared.—4 P.M., pulse 90; temp. 99·2°. Fluid in pericardium diminished.

From this time gradual improvement; entire apyrexia and freedom of joints four weeks after the beginning of the joint-affection.

Case VIII.

Rheumatic fever in a female, æt. 27, with old mitral disease, and slight fresh pericarditis. Salicin given on the tenth and eleventh days, in 15-grain doses, every two hours, caused rapid defervescence, from 103° to 96° in thirty-four hours, the total dose of salicin in this period being only 255 grains. This rapid defervescence was accompanied by delirium, lasting more than two days, and serious collapse, passing over into recovery.

D. E., a female, æt. 27, had had rheumatic fever and chorea in childhood; had then enjoyed good health, though a slight mitral affection had remained; had the first symptoms of rheumatic fever two days after a ball; came under treatment on the eighth day, both knees being affected; urine acid; perspiration slight.

8th day, 2 P.M., pulse 108; temp. 102°; and 9 P.M., pulse

112; temp. 102·8°. 15 grains of carbonate and 15 of nitrate of soda every three hours.

9th day, 9 A.M., pulse 100; temp. 101·8°, and 6 P.M., pulse 124; temp. 103°.

10th day, 8 A.M., pulse 112; temp. 103°. Left elbow and shoulder affected. Slight pericardial rub. Salicin, 15 grains, every two hours.—5 P.M., pulse 116; temp. 102·8°. Pericardial rub the same.

11th day, 9 A.M., pulse 124; temp. 99°. Pericardial friction not heard. Joint affection scarcely felt.—6 P.M., pulse 130; temp. 96°. Profuse perspiration and delirium. Omit salicin; a tablespoonful of port wine every half-hour.—11 P.M., pulse 148; temp. 96°. Delirium much increased and distressing. Subcutaneous injection of $\frac{1}{3}$ grain of morphia.

12th day, 8 A.M, pulse 128; temp. 96·8°. Had some sleep; is still delirious, perspiration continues.—7 P.M., pulse 124; temp. 97·5°. Another injection of morphia.

13th day, 10 A.M., pulse 105; temp. 98°. Delirium diminished.—5 P.M., pulse 92; temp. 98°. 25 grains of bromide of potass with 30 minims of sal volatile every six hours.

From hence the mental condition improved; she gradually, though slowly, regained strength; there was no recurrence of joint affection.

B. FOUR CASES TREATED WITH SALICYLIC ACID.

Case IX.

Second attack of rheumatic fever; mild case; commencement of treatment, viz. 15 grains every two hours on fourth day; complete defervescence in twenty-four hours to rather subnormal temperatures.

A. C., a female, æt. 25, had rheumatic fever when 14 (three weeks' duration); came under treatment on fourth day, with swelling and pain in both wrists and left ankle; heart free; perspiration moderate; urine acid, sufficient in quantity, sp. gr. 1018; digestive functions tolerable.

4th day, 6 P.M., pulse 98; temp. 101·2°. 15 grains of salicylic acid in 3 ounces of water every two hours.

5th day, 9 A.M., pulse 90; temp. 100°. Almost free from pain; slight deafness.—7 P.M., pulse 82; temp. 98°. Abundant perspiration; considerable deafness; joints free. Has

taken 165 grains. Urine abundant, about 70 ounces in twenty-four hours, with distinct reaction on perchloride of iron test. Salicylic acid every eight hours.

6th day, 10 A.M., pulse 80; temp. 97°; and 5 P.M., pulse 75; temp. 97·2°. Feeling of great muscular weakness. Omit salicylic acid.

Gradual recovery without relapse.

Case X.

Second attack, in a boy of 15, with old mitral affection; commencement of treatment, with 10 grains of salicylic acid every hour on sixth day; rapid defervescence to subnormal temperatures.

D. F., a boy æt. 15, had rheumatic fever four years ago, leaving slight mitral affection, after four weeks' duration. Came under treatment on sixth day, with affection of several joints. Skin natural; urine abundant, clear and acid, free from albumen. Tongue slightly coated.

6th day, 4 P.M., temp. 100·5°. 10 grains of salicylic acid in 2 ounces of water every hour, and after 9 P.M. every two hours.

7th day, 9 A.M., pulse 92; temp. 98·8°; and 5 P.M., pulse 90; temp. 98·6°. Swelling and pain much diminished. Urine abundant.

8th day, 9 A.M., pulse 82; temp. 97°. Free from pain, but giddy and deaf and trembling. Has taken 180 grains of salicylic acid. The urine gives abundant proof of the presence of salicylic acid when treated with perchloride of iron. To continue every six hours.—6 P.M., pulse 80; temp. 97·2°.

9th day, 10 A.M., pulse 75; temp. 96·5°. Omit salicylic acid.

Allowed to leave bed five days later. Gradual recovery.

Case XI.

Subacute case in a man æt. 28. Salicylic acid, 20 grains, every two hours from tenth day; defervescence within forty hours, but followed by three relapses; treated like the first attack. Duration five weeks.

10th day, 3 P.M., pulse 80; temp. 99·8°. Several joints swollen and painful; heart free; urine normal; moderate perspiration. 20 grains of salicylic acid every two hours.

11th day, 9 A.M., pulse 75; temp. 99·0°; and 6 P.M., pulse 78; temp. 98·8°.

12th day, 9 A.M., pulse 70; temp. 97·5°. Joints quite free. Salicylic acid three times a day.

Temperature and pulse continued the same till sixteenth day, when, in spite of continued rest, fresh joints became affected. After having taken the salicylic acid again every two hours for twenty-four hours, the joints were free and temperature rather subnormal.

The salicylic acid was then given four times a day till the twentieth day, when he left it off. Had another similar relapse on the twenty-fourth day, and another on the thirty-second day, which were treated, and which disappeared in the same manner as the former. Remained free after thirty-third day, and gradually became quite well.

Case XII.

Mild case, first attack, in a youth æt. 17. 15 grains of salicylic acid every two hours from eighth day of disease; complete defervescence in thirty-two hours, followed by subnormal temperatures and slight prostration. Relapse on sixteenth day from beginning of disease; inability to take either salicylic acid, salicylate of soda, or salicin, on account of vomiting. Recovery under quinine treatment.

C. B., male, æt. 17; first attack. Moderate affection of several joints after fatigue and exposure to cold. On fifth day heart free; tongue very coated; perspiration slight; urine acid.

6th day, 9 A.M., pulse 92; temp. 100·8°; and 5 P.M., pulse 96; temp. 101·5°. Solution of bicarbonate of soda, 20 grains, four times a day.

7th day, 9 A.M., pulse 98; temp. 101·2°. Fresh joint affected; 15 grains of salicylic acid every hour.—6 P.M., pulse 104; temp. 101·2°. Urine, 1018, acid, with a slight reaction of salicylic acid.

8th day, 9 A.M., pulse 100; temp. 101°; and 6 P.M., pulse 95; temp. 100·2° 15 grains of salicylic acid every two hours. Salicylic acid reaction more distinct.

9th day, 9 A.M., pulse 88; temp. 98·8°; and 5 P.M., pulse 82; temp. 98·2°. Joints almost free. Salicylic acid every four hours.

10th day, 8 A.M., pulse 80; temp. 97·5°. Considerable

deafness.—4 P.M., pulse 78; temp. 96·5° Profuse perspiration, with some degree of general prostration. Omit salicylic acid.

Had a slight relapse on sixteenth day of disease; was sick after every attempt to give salicylic acid, salicylate of soda or salicin; recovery under quinine treatment (4 grains three times a day) after eight days.

C. THREE CASES TREATED WITH SALICYLATE OF SODA.

Case XIII.

Mild case, fourth attack, in a man æt. 36, with old mitral affection. On eighth day of disease 20 grains of salicylate of soda every hour; complete defervescence within twenty-four hours, followed by some prostration and slow recovery.

M. P., male, æt. 36, had already had three attacks of rheumatic fever; has old mitral disease; in consequence of exposure to wet and cold seized with pain and swelling of left knee; treated at first with carbonate of potash and colchicum without benefit. On eighth day several joints were affected, perspiration moderate, urine alkaline.

8th day, 4 P.M., pulse 102; temp. 101·8° 20 grains of salicylate of soda every hour.

9th day, 9 A.M., pulse 84; temp. 99°; and 5 P.M., pulse 80; temp. 98°. Joints free; very deaf; rather sick; salicylate every six hours.

10th day, 9 A.M., pulse 82; temp. 97°. Perspires rather profusely. Looks and feels prostrated. Pulse very weak. Omit salicylate of soda (has taken 420 grains).

Recovery very slow, but without relapse, having had only occasionally slight pains and stiffness in different joints, without elevation of temperature.

Case XIV.

Mild attack in a delicate female, æt. 19. 20 grains of salicylate of soda from sixth day; complete freedom from pain and pyrexia after forty-eight hours; slight relapse on thirteenth day; vomiting after every attempt to give the remedy again; gradual recovery under quinine.

A. T., a delicate female, æt. 19, after fatigue and sitting

in a damp place, seized with pain, and swelling in both knees, and afterwards left ankle. Came under observation on sixth day. Heart free; perspiration slight; urine scanty, loaded with lithates.

6th day, 7 P.M., pulse 102; temp. 101·2°. Salicylate of soda, 20 grains, every two hours.

7th day, 9 A.M., pulse 100; temp. 100·5°; and 5 P.M., pulse 92; temp. 99°. Pain greatly diminished. Urine abundant, clear.

8th day, 8 A.M., pulse 85; temp. 98·8°; and 6 P.M., pulse 90; temp. 97·5°. Joints quite free. Great tendency to sickness. Omit salicylate.

Remained well from ninth to twelfth day, but on the thirteenth she had a relapse; was quite unable to take the salicylate of soda or its congeners on account of vomiting; recovered slowly under quinine, 4 grains three times a day.

Case XV.

Male, æt. 31; attack of rheumatic fever after a prolonged cold bath; cardiac complication. Salicylate of soda, 20 grains, every hour on sixth day of disease, afterwards every two hours. Pyrexia and joint affection removed within four days; a slight mitral affection remaining.

T. M., male, æt. 31, seized with symptoms of rheumatic fever a day after a very long cold bath (half an hour). Came under observation on sixth day with pains and swelling in left knee, right shoulder, and elbow, having a slight mitral murmur, without any history of previous affection; perspiration moderate; urine scanty and acid; thick fur on tongue.

6th day, 4 P.M., pulse 104; temp. 102·2°. 20 grains of salicylate of soda every hour.—10 P.M., pulse 100; temp. 101°. Has less pain; salicylate every two hours.

7th day, 8 A.M., pulse 92; temp. 100·4°; and 5 P.M., pulse 92; temp. 99·4°. Mitral murmur unchanged, perhaps louder.

8th day, 9 A.M., pulse 94; temp. 98·8°; and 6 P.M., pulse 96; temp. 99·4°. Urine abundant, clear, acid. Pain and swelling diminished. Salicylate every three hours from 9 P.M.

9th day, 9 A.M., pulse 96; temp. 99°; and 5 P.M., pulse 98; temp. 99·4°.

10th day, 10 A.M., pulse 80; temp. 97·5°. Joints free; mitral murmur remains.—7 P.M, pulse 80; temp. 97°. Great dislike to remedy, which is discontinued.

Recovery slow, but otherwise good, with the exception of

the mitral murmur, which is more distinct after six weeks than in the beginning of the disease.

Remarks.—In comparing the three remedies, salicin, salicylic acid, and salicylate of soda, I am, as yet, unable to recognise any essential difference with regard to their influence on the morbid process in question; I may, therefore, analyse the results of the fifteen cases together. In eight of them—mostly mild cases—the disease was checked within two to four days, without any unfavourable accidental effects of importance. In one the attack was rapidly overcome, but all the phenomena of serious collapse, attended with delirium, came on, together with the disappearance of the symptoms of the rheumatic fever process, although only a comparatively moderate dose had been given. In one (of subacute type) three relapses occurred, by which, though each single outbreak was rapidly subdued by the remedy, the duration of the disease extended over five weeks; in three others the first attack was checked by the remedy, but the relapses which occurred had to be treated without salicin or its congeners, on account of vomiting produced by them; in one case the remedy caused vomiting almost from the first, before it had exercised any influence on the disease, and another plan of treatment had to be adopted; and in one case, finally, the disease rapidly increased in severity, and became complicated with pericarditis, in spite of large doses of the remedy, given at short intervals during five days.*

Gonorrhoic arthritis or *gonorrhoic rheumatism* in four cases attended with slight pyrexia (99° to 100°). One of these could not take either salicin, salicylic acid, or salicylate of soda, on account of sickness produced by the remedy. One took, first, 15 grains of salicin every two hours for two days, then 20 of salicylate of soda for three days, without more benefit than rest alone usually produces in other cases.

* Since this paper was written, in November 1876, I have treated sixteen further cases of rheumatic fever with salicin or its congeners. The result of the treatment was about the same as in the above fifteen cases, viz. there was a rapidly favourable result in eight cases out of the sixteen; the result was less perfect in four; in one case the three remedies (salicin, salicylic acid, and salicylate of soda) were taken in large doses at short intervals without any apparent influence on the disease, which assumed a grave form, and terminated only after twelve weeks in imperfect recovery. In three cases the remedies had to be discontinued, on account of vomiting produced in two and severe collapse produced in one of them. Salicin was, on the whole, better tolerated and was less disagreeable to the patients than the two other remedies, but in two cases it was decidedly less active in checking the disease than the salicylic acid and the salicylate of soda.

Giddiness and nausea prevented further perseverance. A third experienced somewhat more marked diminution of pain in the joints and pyrexia within two days of treatment with salicin, 15 grains every two hours, though the swelling of the joints and the state of the urethra were not materially influenced. The fourth was, after three days' use of salicylate of soda, 20 grains every two hours, distinctly benefited as regards pyrexia, pain and swelling, the state of the urethra remaining uninfluenced.

The difference in the action of these remedies on different cases of gonorrhoic rheumatism is probably due to the difference in the nature of the cases, for some cases of gonorrhoic rheumatism, though induced by the gonorrhoic condition, have a large share of acute or subacute articular rheumatism of the usual character, while in others this element is scarcely to be recognised. To the former class belonged the fourth case mentioned, in which the salicylate acted so beneficially.

Two cases of *acute gout*—i.e. gouty inflammation of the knees, feet, and hands, accompanied by pyrexia (99·5° to 100·5°)—did not derive any benefit from salicin and salicylate of soda in 15 to 25 grain doses, repeated four to six times a day, during forty-eight and sixty hours. The patients themselves were so dissatisfied with the result that one asked for, the other took on his own responsibility, the gout mixture used by him in former attacks, viz. iodide and bromide of potassium, and carbonate of soda, with small doses of colchicum.*

TYPHOID FEVER.

Case I.

Case of average severity and regular course in a female, æt. 26. Salicylate of soda in 40-grain doses, three times a day, given on the tenth, eleventh, twelfth, and thirteenth days of the disease, had the effect of diminishing the pyrexia (about 1° to 1·8°), improving the mental condition, and restricting the diarrhœa; but the remedy had to be given up

* Out of three cases of acute gout treated with salicylate of soda, in half-drachm doses, every two hours, since these remarks were made, two apparently were much benefited, as regards pain and swelling and fever, by the treatment; while the third could not continue the treatment on account of nausea. In this third case the salicylic acid reaction of the urine was not present.—*May* 1877.

on account of sickness and collapse. Duration of the disease about thirty days.

C. D., a female, æt. 26, moderately nourished, i.e. not fat, came under treatment on about the sixth day, with headache, tendency to diarrhœa, and moderate pyrexia.

6th day, 5 P.M., pulse 94; temp. 102°. 15 minims of acid. hydrochlor. dilutum in an ounce of water, three times a day.

7th day, 9 A.M., pulse 88; temp. 101°; resp. 28; and 5 P.M., pulse 98; temp. 102·4°.

8th day, 8 A.M., pulse 90; temp. 101·5°. First rose-spots on abdomen.—2 P.M., temp. 102·4°. Moderate diarrhœa (three motions).—7 P.M., pulse 105; temp. 103; resp. 36.

9th day, 8 A.M., pulse 95; temp. 102°. More rose-spots. —2 P.M., pulse 100; temp. 102·6°. Spleen enlarged.—7 P.M., pulse 108; temp. 103·5°; resp. 34. Two motions. Rather drowsy, with occasional momentary delirium.

10th day, 9 A.M., pulse 98; temp. 102°; 2 P.M., temp. 103°; and 7 P.M., pulse 105; temp. 103°. At 10 A.M., 4 P.M., and 10 P.M., 40 grains of salicylate of soda in 2 oz. of water, sweetened with syrup. aurant.

11th day, 9 A.M., pulse 92; temp. 101°.—2 P.M., pulse 96; temp. 101·8°. One motion, more solid.—7 P.M. pulse 100; temp. 101·8; resp. 32.

12th day, 9 A.M., pulse 88; temp. 101· 2°; resp. 30.— 2 P.M., temp. 101·4°; and 7 P.M., pulse 95; temp. 101·8°. Complains of deafness and 'terrible noise in the head;' is not drowsy, not delirious, looks brighter. Motion almost normal.

13th day, 9 A.M., pulse 85; temp. 99·8°.—2 P.M., temp. 100·4°; and 7 P.M., pulse 115; temp. 99·6. Complains of nausea in the afternoon; is sick in the beginning of the night.

14th day, 9 A.M., pulse 95; temp. 99·2°. Profuse perspiration, small pulse, and sense of prostration in the morning; repeated sickness. Medicine discontinued. A teaspoonful of brandy every half-hour. At 6 P.M., pulse 112; temp. 102·5°.

15th day, 9 A.M., pulse 104; temp. 100·6°; resp. 34.—2 P.M., temp. 102°; and 7 P.M., pulse 120; temp. 103·5°. Small doses of hydrochloric acid. A teaspoonful of brandy every hour.

16th day, 9 A.M., pulse 106; temp. 101°; and 6 P.M., pulse 116; temp. 103°. Phenomena of prostration disappeared. Not drowsy. Three motions.

17th day, 9 A.M., pulse 102; temp. 100°; and 6 P.M., pulse 110; temp. 102·5°. Three motions.

18th day, 8 A.M., pulse 95; temp. 99·2°; resp. 28; and 6 P.M., pulse 115; temp. 103°. Two motions.

Further gradual decrease of phenomena of disease; cessation of pyrexia about the thirtieth day from beginning of the illness.

Case II.

Case of moderate severity in a healthy young man. Took salicylate of soda in 40-grain doses four times a day on the eighth, ninth, and tenth days, and 60 grains twice a day from the twelfth to the eighteenth day, after which period it had to be discontinued on account of nausea. The temperature was distinctly lowered from 1° to more than 2°; the pulse-rate likewise slightly; nervous and digestive functions improved. Duration of case four weeks.

E. F., male, æt. 21, thin, with good muscular development, came under observation on about the fifth day of typhoid fever, complaining of headache, lassitude, and want of appetite; had a whitish tongue with red edges.

5th day, 6 P.M., pulse 96; temp. 101·5°. Quin. sulphat. gr. i., acid. hydrochlor. ♏xv., aquæ ad ℥i.; ter die.

6th day, 9 A.M, pulse 90; temp. 100·5°; and 6 P.M., pulse 102; temp. 102°. Two motions.

7th day, 9 A.M., pulse 92; temp. 101°. Head heavy.—6 P.M., pulse 106; temp. 102·6°; resp. 30. Three motions, rather thin. Some tendency to drowsiness.

8th day, 9 A.M., pulse 100; temp. 102°; resp. 28. Several rose-spots on abdomen and chest. 40 grains of salicylate of soda in two ounces of water every six hours.—2 P.M., temp. 102·5°; and 6 P.M., pulse 105; temp. 101°.

9th day, 9 A.M., pulse 95; temp. 100·5°; resp. 26; and 2 P.M., temp. 100°. Less heavy.—6 P.M., pulse 98; temp. 100·4°. Two motions.

10th day, 9 A.M., pulse 109; temp. 99·8°. Abundant rose-spots.—2 P.M., pulse 102; temp. 100·2°; and 6 P.M., pulse 104; temp. 100·2; resp. 28. Two motions, more solid.

11th day 9 A.M., pulse 96; temp. 99°., 2. P.M., pulse 98; temp. 99·5; and 6 P.M., pulse 95; temp. 99·5°. Much deafness; great dislike to medicine. To take only twice a day 60 grains of the salicylate.

12th day, 9 A.M., pulse 95; temp. 99·8°; resp. 24. Only one motion, almost solid.—2 P.M., pulse 92; temp. 99·8°. Tongue moist; appetite good.—7 P.M., pulse 92; temp. 100·4°. Spleen slightly enlarged.

13th day, 9 A.M., pulse 100; temp. 99·8°; 2 P.M., pulse 98; temp. 99·5°; and 6 P.M., pulse 90; temp. 99·6°. Looks bright, answers readily, takes notice of surroundings. Two motions.

14th day, 8 A.M., pulse 102; temp. 100·5°; 2 P.M., pulse 95; temp. 99°; and 6 P.M., pulse 90; temp. 100·2°. Two motions.

15th day, 9 A.M., pulse 95; temp. 100°; resp. 29; 2 P.M., temp. 99·2°; and 7 P.M., pulse 98; temp. 100·5°. No new rose-spots. One motion.

16th day, 8 A.M., pulse 88; temp. 98·8°; 2 P.M. temp. 99°; and 6 P.M., pulse 96; temp. 100·2°. No motion.

17th day, 9 A.M., pulse 80; temp. 98·2°; 2 P.M., temp. 99·5°; and 6 P.M., pulse 92; temp. 100°; resp. 26. One solid motion. Much noise in ears. Great dislike to medicine.

18th day, 8 A.M., pulse 75; temp. 98°. Nausea without actual sickness for several hours after every dose of mixture. Much perspiration. No motion. 2 P.M., temp. 98·8°; and 7 P.M., pulse 92; temp. 99·5°.

19th day, 8 A.M., pulse 78; temp. 98·2°. Omit the salicylate. One motion. 2 P.M., temp. 99·5°; and 6 P.M., pulse 90; temp. 100·5°.

20th day, 8 A.M., pulse 70; temp. 98°; 2 P.M., temp. 100·5°; and 5 P.M., pulse 95; temp. 101·5°. Two motions.

21st day, 9 A.M., pulse 72; temp. 98·5°; 2 P.M., temp. 99·8°; and 7 P.M., pulse 102; temp. 101·4°. One motion.

Slight evening pyrexia continued for another week, after which the convalescence made rather rapid progress.

Case III.

Average case of typhoid fever in a young man of good constitution. Had three 50-grain doses of salicylate of soda on seventh and eighth days, and two 60-grain doses on ninth, tenth, and eleventh days, when the medicine had to be discontinued, on account of sickness and prostration; the anti-pyretic effect having been well marked. The pyrexia having increased on the twelfth and thirteenth days, an

enema containing 120 grains was given on the thirteenth, and again on the fourteenth day Some prostration and nausea. Duration of pyrexia, three and a half weeks. Good recovery.

F. A., male, æt. 22, generally very healthy, had slight shivering while staying in an infected house; was seen on fourth day after the shivering, complaining of headache, aching in back and limbs; great heaviness; tongue coated.

4th day, 11 A.M., pulse 90; temp. 101°; and 5 P.M., pulse 112; temp. 101°; resp. 28. Citrate of ammonia in effervescence, 30 grains, three times a day.

5th day, 9 A.M., pulse 92; temp. 100·5°; and 5 P.M., pulse 98; temp. 102·2°. No rose-spots. Spleen perhaps slightly enlarged.

6th day, 8 A.M., pulse 98; temp. 101°; and 6 P.M., pulse, 105; temp. 102·2°. Two motions, rather thin.

7th day, 9 A.M., pulse 92; temp. 100·4; and 6 P.M., pulse 100; temp. 102·5°. Several faint rose-spots on abdomen; tongue reddish, inclined to be dry. Three motions, thinnish. Salicylate of soda, 50 grains, at 10 P.M., 2 A.M., and 5 P.M.

8th day, 9 A.M., pulse 90; temp. 100°; and 5 P.M., pulse 95; temp. 100·2°. Two motions; tongue moister; no drowsiness; dislike to medicine.

9th day, 8 A.M., pulse 85; temp. 100°; 2 P.M., temp. 100·2°; and 6 P.M., pulse 102; temp. 99·8°. 60 grains of salicylate of soda at 4 P.M. and 10 P.M.

10th day, 9 A.M., pulse 88; temp. 99·8°; 2 P.M., pulse 96; temp. 99·8°; and 6 P.M., pulse 108; temp. 100°. Only one motion; nausea after the medicine.

11th day, 8 A.M., pulse 110; temp. 99°; 2 P.M., pulse 104; temp. 100·4°; and 5 P.M., pulse 102; temp. 101·5°. Has been repeatedly sick during the night; perspires profusely; pulse very weak. Omit salicylate of soda.

12th day, 9 A.M., pulse 105; temp. 101°; 2 P.M., temp. 102·2°; and 6 P.M. pulse 110; temp. 103·5°. A teaspoonful of brandy every half-hour. Copious rose-spots; spleen larger.

13th day, 9 A.M., pulse 100; temp. 100·8°; and 2 P.M., pulse 112; temp. 103°. Two motions, rather thin; inclined to be drowsy.—5 P.M., pulse 108; temp. 104°; and 9 P.M., pulse 98; temp. 101·5°. Injection of 2 drachms (120 grains) of salicylate of soda dissolved in 4 ounces of water at 5 P.M.

14th day, 9 A.M., pulse 92; temp. 99°, noon; pulse 104; temp. 101·4°; 2 P.M., pulse 102; temp. 100°. Brandy, two tea-

spoonfuls, every two hours. The same injection as yesterday at noon to-day.—4 P.M., pulse 96; temp. 100·5°.—6 P.M., pulse 104; temp. 101·4°. Nausea; two teaspoonfuls of brandy every hour during the night.

15th day, 8 A.M., pulse 98; temp. 100·5°; and 2 P.M., temp. 102°. Profuse perspiration; feeling of prostration; pulse feeble and irregular.—6 P.M., pulse 112; temp. 103·5°; and 9 P.M., pulse 108; temp. 103°. Tendency to sickness.

16th day, 8 A.M., pulse 90; temp. 99·5°. Two motions, half solid.—2 P.M., temp. 101°; and 6 P.M., pulse 105; temp. 102·2°. Has recovered from the state of collapse.

17th day, 9 A.M., pulse 80; temp. 98·8°; and 5 P.M., pulse 98; temp. 101·5°.

Moderate degrees of pyrexia continued till the second half of the fourth week from the occurrence of the rigor. Convalescence satisfactory.

Remarks.—All these cases were of well-marked type, of average severity, in young adult persons of good constitutions. Salicylate of soda in doses of 40 grains, three or four times a day, or 60 grains twice a day, exercised a distinctly antipyretic influence, causing a diminution of temperature from 1° to 2½°, and also a slight reduction in the pulse-rate, and the same was the case when enemata containing 120 grains were given; but sickness and prostration were produced in two cases, and intolerable nausea in the third, rendering the discontinuation of the remedy necessary, after which the pyrexia again increased. In addition to the diminution of pyrexia the remedy seemed to diminish the drowsiness, the tendency to diarrhœa and dryness of the tongue, and nourishment was taken more readily. The duration of the whole disease was probably not specially influenced, but possibly the convalescence was less protracted than it otherwise might have been.

After these remarks had been written I met with a fatal case of typhoid fever at the German Hospital, in which during several days salicylate of soda had been given. To my colleague, Dr. Altdoerfer, one of the resident medical officers who attended the case with me, I am indebted for the notes of this as well as of several other cases.

W. K., æt. 27, a tolerably muscular man, began to feel ill eight days before admission (on November 23), and vomited almost everything he took during several days. When admitted he was very drowsy, slept almost constantly, had had no motion for four days; tongue dryish, with red

edges. There was no exanthema; moderate bronchial catarrh; frequent vomiting; bowels constipated. Pulse 108; temp. 103°.

Received a tablespoonful of castor-oil. Diet: milk and soda-water in small quantities. The bowels were only once, but sufficiently, moved after the oil; the vomiting ceased, but the drowsiness continued; he slept almost constantly. his answers were slow, indistinct, and confused. The temperature varied between 102° and 103°, and was not much influenced by two 16-grain doses of quinine on the 25th. Pulse between 108 and 120.

On the 27th the temperature varied from 103° to 104°; the pulse from 116 to 124; several rose-spots were observed on abdomen and chest, and the spleen was found to be enlarged; 45 grains of salicylate of soda were then prescribed, to be given three times a day.

On the 28th the temperature varied from 98·6° to 102·2°; on the 29th, from 101° to 100°; on the 30th, from 100° to 100·8°. The pulse rose to 128 on the 29th; the drowsiness was not diminished by the lowering of the temperature; the bowels continued costive, and a dose of castor oil caused the passage of a fluid motion into the bed; the tongue remained dry; therefore none of the favourable influences on the digestive and nervous condition remarked in the cases just related could be observed in this case, and the salicylate was discontinued on November 30—viz. about the sixteenth day of the disease—and 5 grains of quinine were given three times a day, and 8 oz. of brandy in the twenty-four hours. On December 1 the temperature rose in the afternoon to 104°, with a pulse of 148°. He died on December 2, *i.e.* about the seventeenth or eighteenth day of the disease.

The post-mortem examination showed extensive ulceration of the Peyer's and solitary glands; hypostatic congestion of the posterior parts of both lungs, with rather peculiar isolated patches of red hepatisation near the root of both lungs, reminding one of embolic changes; the bronchial mucous membrane was very red; the heart was flaccid, but the muscular fibre had no traces of either fatty or granular degeneration, the striation being remarkably distinct. The brain offered nothing abnormal.

Remarks.—The power of reducing temperature was in this case likewise evident, but the pulse-rate did not decrease with the temperature, and the other functions of the nervous and

digestive systems were not improved by it. I do not think that we have any reason to ascribe to the salicylate of soda any share in the fatal issue, for the early manifestation of the serious nerve symptoms pointed to the unusually powerful influence of the typhoid poison on the nerve-centres. Whether the state of the heart and respiratory organs was in any way due to the salicylate I am unable to say, as I have no other post-mortem examination of a case in which either salicylic acid, salicylate of soda, or salicin had been given.

In two cases of *ague*, viz. one of tertian, one of quotidian intermittent fever, neither salicin given in 30-grain doses three times a day, nor salicylate of soda in 60-grain doses three times a day, had a curative effect, while three 10-grain doses of quinine were sufficient in one, and four 10-grain doses in the other, to check the recurrence of the paroxysms.

In two cases of *hectic fever* in consumptive patients two 30-grain doses of salicin given in the forenoon had several times the effect of diminishing the intensity of evening pyrexia, but in one of the cases a considerable degree of collapse accompanied this antipyretic effect; in the other case the remedy seemed to lose its effect after four days.

In a case of *chronic pneumonia* of the lower part of the right lung in a young man a single dose of 90 grains of salicylate of soda given in the morning on several successive days had the effect of diminishing the otherwise regularly recurring evening pyrexia by 2° to 3°, without causing any inconvenience to the patient.

In a case of *cynanche tonsillaris*, with herpes-like blisters on the tonsils, the salicylate of soda was used in 30-grain doses every three hours from the evening of the second day, and the pain and pyrexia ceased almost entirely at the end of the third day; but as it is the nature of the complaint to terminate sometimes on the third day, at other times on the fifth, no inference can be drawn from this isolated observation.

Scarlet Fever.—A boy, æt. 12, having been in contact with a severe case of scarlet fever five days previously, complained of pain in the throat, headache, and general lassitude on October 30, at noon.

1st day, 6 P.M., pulse 125; temp. 103°; resp. 36. 20 grains of salicylate of soda every two hours.

2nd day, 9 A.M., pulse 120; temp. 102°, and 6 P.M., pulse 118; temp. 101°. Salicylate of soda continued. Well-marked eruption towards the evening.

3rd day, 8 A.M., pulse 110; temp. 100·2°. Salicylate

continued.—5 P.M., pulse 104; temp. 99·4°. Throat affection slight; eruption normal.

4th day, 9 A.M., pulse 105; temp. 99·2°. Salicylate only every four hours.—6 P.M., pulse 102; temp. 99°. Eruption begins to fade.

5th day, 10 A.M., pulse 92; temp. 98·1°; and 7 P.M., pulse 90; temp. 98·4°. Omit salicylate of soda.

The boy remained free from pyrexia, and the recovery was quite normal, without any albuminuria or dropsy.

Considering the rather high degree of temperature on the first day of the manifestation of the disease and diminution already on the second, and still more on the third day, one feels inclined to think that the salicylate of soda had a share in this early diminution of pyrexia; but it is not permitted to draw any inference from a solitary case, as in many cases of scarlet fever the febrile symptoms diminish with the outbreak of the eruption.

Note.—In two other cases of scarlet fever with high temperatures, the one in a youth of 17, the other in a girl of 15, treated since, salicylate of soda in 60-grain doses, twice a day, exercised a decidedly antipyretic effect.

Polyarthritis Scarlatinosa, or Scarlet Fever Rheumatism.

A girl, æt. 10, sickened with scarlet fever on October 16, was free from pyrexia on 20th (fifth day), began again to be feverish, and to manifest painful swellings of several joints on the 22nd, viz. seventh day from the beginning of the fever.

8th day, 6 P.M., pulse 124; temp. 101·8°. 20 grains of salicylate of soda every two hours.

8th day, 9 A.M., pulse 120; temp. 100; and 5 P.M., pulse 115; temp. 100·2°. Pain much diminished.

9th day, 10 A.M., pulse 100; temp. 98·6°. Salicylate of soda every four hours.—6 P.M., pulse 98; temp. 99°. Pain almost gone.

10th day, 3 P.M., pulse 94; temp. 98·2°. Free from pain and swelling. Omit salicylate of soda.

The further progress of convalescence was uninterrupted.

This case is as little conclusive as the preceding, but it seems to point to a beneficial effect of the drug in the scarlet fever rheumatism, as the duration of this form of polyarthritis is, under ordinary circumstances, rarely less than four to five days.

In comparing my own limited with the more abundant

experience published by others I venture to draw the following inferences:—

1. That salicin and its congeners are powerful *antipyretics*; that their antipyretic effect shows itself principally in lowering the temperature, but that the pulse-rate, as a rule, is likewise somewhat reduced. I am inclined to place these remedies as high as quinine, when given in sufficient doses, with this exception, however, that in ague they are almost powerless, while quinine may still be regarded as a specific.

2. Salicin and its congeners appear to be the most curative remedies in *rheumatic fever* hitherto tried, although we cannot cure by them all cases, even if we employ them early. Some of the failures are due to the inability of the patient to take the remedy, others to the want of power of the remedy over the disease, even if given and retained in large doses. Possibly there is an essential difference in the nature of cases, in spite of the similarity of the prominent phenomena.

In some of the unsatisfactory cases the remedy, though retained, seems not to be absorbed, or not to undergo the usual changes in the blood, as the characteristic reaction of the urine is less marked or absent.

In the favourable cases the whole course of the disease is much shortened, and the well-known complications of heart and lungs are rendered much less frequent. It ought, however, to be borne in mind that a patient who, after two or three days' treatment, has become free from pyrexia and joint affection is not to be regarded as perfectly cured, for relapses are very frequent, unless strict management is maintained, and the remedy continued at longer intervals for about a week after the cessation of the pyrexia and pain.

3. It appears probable that we may beneficially employ the antipyretic power of these remedies in other febrile diseases, by checking the high temperatures and combining the use of these remedies with that of other remedial agents, such as alcohol and bathing.

4. The use of salicin, salicylic acid, and salicylate of soda is occasionally attended with undesirable accidental symptoms. In addition to vomiting and nausea, which not rarely altogether prevent the employment of these remedies, irritation of the fauces, headache and giddiness, noises in the ears, with varying degrees of deafness, are frequent symptoms. In several of our cases we observed collapse of a milder degree, with profuse perspiration, and twice the same con-

dition to a more severe degree. We can, therefore, corroborate the remarks of Goltdammer and others that in constitutions with a weak heart and in states of exhaustion towards the termination of febrile diseases we ought to be very careful with the amount of the dose, in order that the pyrexia be not too suddenly checked and the heart's power too much lowered.

Delirium is another accidental symptom occasionally witnessed, and this is probably not always of the same nature. Thus it appears that in the eighth case of rheumatic fever related the delirium coming on with the sudden reduction of body heat from 103° to 96°, accompanied by profuse perspiration and extreme feebleness of pulse and coldness of extremities, was a delirium of collapse, similar to what we see occasionally from large doses of quinine or veratria, with sudden defervescence, and also towards the natural termination of acute diseases; but in other cases—and this is perhaps the majority—the delirium is a phenomenon of intoxication by the remedy, an instance of which my colleague Dr. Port has lately pointed out to me in one of his patients at the German Hospital.

In two instances I have seen, during the treatment with salicin and salicylic acid, a slight red eruption over the neck, chest, and arms, somewhat intermediate in appearance between the measles and scarlet fever rash, but I am not quite certain whether this was due to the remedy.

Note.—Since the preceding remarks were written I have had the opportunity of observing irritation of the kidneys amounting to a slight degree of desquamative nephritis, after three 50-grain doses of salicylate of soda.

5. With regard to comparison of the action of salicin, salicylic acid, and salicylate of soda, I can confirm the remark of several authors that the salicylate of soda, owing to its greater solubility and more rapid absorption, acts more quickly than either of the other preparations; but the dose required to obtain the same effect must be somewhat larger. The taste is also less complained of, and with syrup of orange-peel or extract of liquorice, and perhaps some aromatic water, it is by no means unpalatable.

It appears to me not yet settled whether there is any marked difference between salicin and salicylic acid, excepting that the latter is less soluble, has a more disagreable taste, and occasionally causes local irritation. The former, *i.e.* salicin, is better retained by the stomach than either

salicylic acid or salicylate of soda, and much more rarely causes unpleasant general symptoms, but in some instances I have found its action less sure, or, I should say, less powerful, than that of salicylic acid.

XIV.—A *Case of Acute Rheumatism Treated by Salicylate of Soda. Intercurrent Scarlatina and peculiar Skin Eruption.* *By* JOHN CAVAFY, M.D. *Read January* 12, 1877.

J. G., æt. 33, footman, was admitted into St. George's Hospital under my care on June 1, 1876, with rheumatism of four days' duration. There had been one previous attack at the age of 16.

On Admission.—He was rather anæmic, and nearly all his joints were painful. The knees and right wrist were most affected, and were red and swollen. He was sweating profusely. The heart-sounds were normal; the urine very acid; tongue foul. Pil. col. c. cal. gr. x. h. s.

June 2.—No change; ordered sodæ salicyl. ʒss.; 2 dis. horis; temp. A.M., 103°; P.M., 103·8°.

3.—The medicine was continued every two hours, from 6 yesterday evening to 6 this morning. He is much relieved, feeling pain only on moving, and the swelling and redness of knees and wrist were diminished. The medicine was again given to-day every two hours, from 2 to 10 P.M., when he complained of giddiness, and the salicylate was ordered every four hours. Temp. fell to 101° morning and evening.

5.—Since the last note the medicine has been given every four hours with good results. There has been no giddiness or headache, and he is quite free from pain, being able to move about easily in bed. The temperature has fallen to 98°.

7.—To-day had slight shivering, headache, and sickness, with slight sore-throat. The soft palate, uvula, and tonsils were rather red; he was quite free from articular pain; urine faintly acid; the temperature rose in the evening to 100·5°.

8.—Sore-throat worse; uvula, tonsils, and soft palate of a brilliant red; face flushed; bright red punctate rash over neck and thorax. He complains of great itching and irritation of the arms and legs, which are covered with raised erythematous patches, resembling urticaria, but permanent. This eruption is confined to the extremities, the trunk and also the hands and feet being unaffected. Evening temp. 101°.

14.—On the 9th the sore-throat was very severe, and he was put on ice and tincture of perchloride of iron; on this day also pain reappeared in the right shoulder. To-day it is noted that the sore-throat and scarlet rash on chest have entirely subsided. The erythematous patches on the extremities became covered with vesicles, some very minute, others larger and confluent here and there, resembling herpes. They were filled with an opalescent fluid. The vesicles have now nearly dried up, and the irritation and itching have nearly disappeared. The rheumatic pains gradually increased in severity, and he is now unable to move, with great pain in nearly all joints and swelling of hands and wrists. The heart's action was turbulent, and a faint systolic murmur was heard at the base. The temperature was once more high, 102·6°. He was again ordered sodæ salicyl. ʒss. every two hours.

16.—The pains are very much diminished, only the wrists being slightly affected; the temperature has also fallen nearly to normal; but the erythematous eruption has reappeared over the upper and lower extremities, accompanied by great itching and irritation. There are a few patches on the trunk also. These all became the seat of vesicles, but the crop was much scantier than on the previous occasion. The salicylate was persisted in, notwithstanding slight nausea, and on June 19 the eruption had almost disappeared, and there was general desquamation, the skin of the hands especially peeling off in large flakes. The urine was acid, and free from albumen. The salicylate was now omitted, and he was given a mixture of gentian and magnesia. But the temperature gradually rose again, and on the 23rd he had a sharp return of pain in the arms and shoulders. He was again treated with salicylate of soda, and again the pains subsided and disappeared in three days, the temperature also falling. On this occasion, although he again complained of itching of the skin, no eruption whatever appeared. He continued well till July 13, when another relapse was treated in the same way by salicylate of soda, and he was well in three days, without any skin eruption. He continued well after this, and was discharged on August 1, the heart being noted normal.

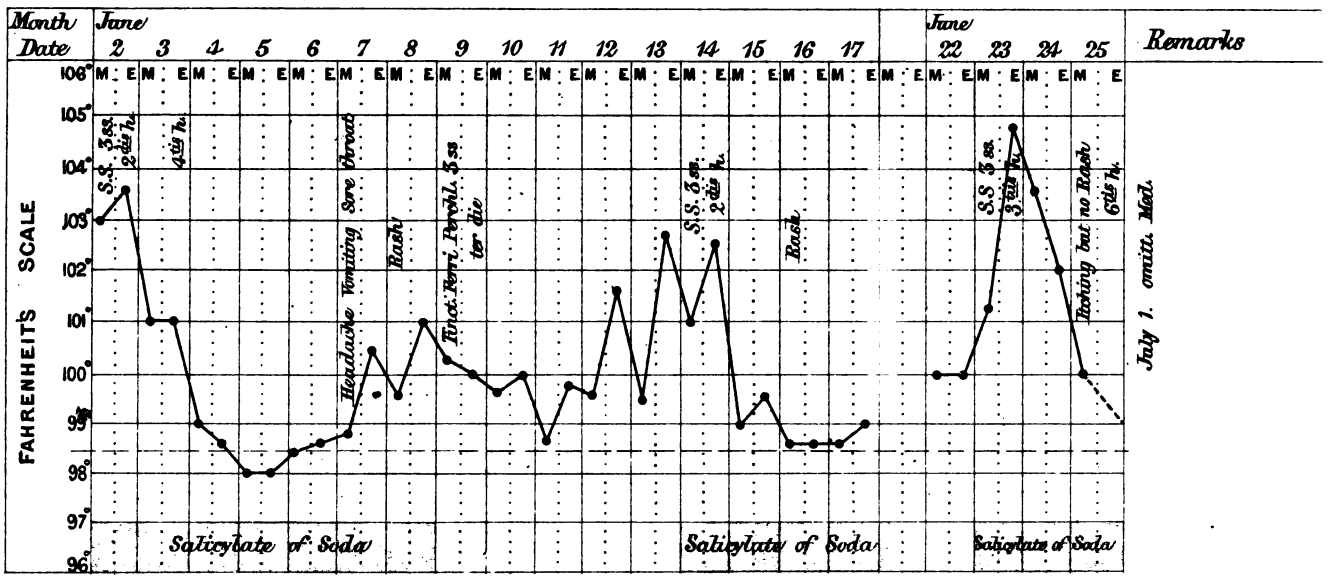
Remarks.—In this case the characteristic action of salicylic acid and its salts in lowering temperature and relieving pain was sufficiently manifest; but the patient was hardly a favourable case, as he relapsed so frequently on the discon-

tinuance of the remedy. I have brought the case before the Society chiefly in order to call attention to the curious eruption, which was evidently caused by the salicylate of soda so far as the erythematous patches and crops of vesicles are concerned. It may perhaps be doubted whether what I considered to be scarlatina may not have been merely a scarlatiniform rash also caused by the drug. On this point my opinion is decidedly in favour of true scarlatina. The mode of onset, with shivering, vomiting, and intense inflammatory sore-throat; the rise of temperature, and punctate scarlet rash on neck and thorax on the second day; and, lastly, the profuse flaky desquamation of the hands, leave little room for hesitation in forming this conclusion. It will be seen, also, that in the second attack of rash there was no distinct onset with shivering, &c., no rise of temperature, and no sore-throat. I think it may be granted, therefore, that the patient had scarlatina. It then becomes a question of some interest whether the scarlatina should be considered as having any causal connection with those rheumatic attacks which came on subsequently to it. These would in that case be examples of scarlatinal polyarthritis. Although I cannot give a decided opinion upon this point, I incline to the view that the fever had no influence in their production, because, in the first place, the man's illness began with rheumatism; and, secondly, relapses of equal severity have come under my notice in cases of ordinary acute rheumatism. The erythematous and vesicular rash is certainly not a frequent toxic effect of the internal administration of salicylate of soda, and has only come under my notice in this one case out of a large number which I have seen. It seems, however, to be not very uncommon after external application of the acid, as is shown by the cases communicated last year to the Society by Mr. Callender.* In my patient a tolerance of the drug seems to have been gradually established, as the second eruption was not so severe as the first; and the third and fourth administrations were not followed by any eruption at all. It is a somewhat interesting fact that very similar eruptions have occasionally followed the administration of quinine,† which in many of its effects so closely resembles salicin and salicylic acid. The fluctuations of temperature are shown in the annexed chart.

* 'Clin. Soc. Trans.,' vol. ix. p. 9.

† 'Journal de Thérapeutique,' No. 8, 1876; and 'Journal des Connaissances Médicales,' No. 18, 1876.

Name J. G. ..... Age, 33. Disease, Acute Rheumatism.



XV.—*Cases of Subcutaneous Section of the Neck of the Thigh-bone.* By B. E. Brodhurst. *Read January* 26, 1877.

In the fifth volume of the St. George's Hospital Reports, 1870, I contributed a paper on Ankylosis, and in it I referred to certain cases of subcutaneous osteotomy; and among others to sections of the neck of the thigh-bone.

This evening I propose to bring before the Society two cases in which this operation was performed; in both of which the right thigh was flexed upon the pelvis, and the knee was crossed over the opposite thigh in such a manner as to close the vagina and to interfere with the evacuation of the bladder. Excoriation of the thighs, with considerable discomfort, constantly occurred as a consequence of this position; but also the shortening of the limb, in one instance to the extent of 7 inches, and in the other to the extent of 4 inches, rendered it necessary that artificial support, such as sticks or a crutch, should be used in walking.

Case I.

E. F., æt. 18, had been under the care of Dr. Risk, of Blackpool, and was sent up by him to be under my care in 1864.

In consequence of a slight accident at eight years of age, which at the time was scarcely noticed, hip-joint disease was established, abscess formed, and eventually bony ankylosis took place, the thigh being flexed and adducted. The foot was raised about 4 inches from the ground. The pelvis was much tilted, and there was considerable lordosis. A crutch was always used in walking. On October 18 I divided the neck of the thigh-bone subcutaneously. The external incision was made by entering the knife a quarter of an inch above the great trochanter and carrying it directly upwards to the extent of 1½ inches. The knife was then passed down to and over the neck of the femur, and, being withdrawn, a small strong saw was introduced into the wound, and with it the bone was divided immediately above the trochanter. The saw was then re-applied as high up as it could be worked, and a small portion of bone was removed.

While the patient was still under chloroform the limb could be fully extended; and it was observed that the condition of lordosis was at the same time in great measure removed. The hæmorrhage was inconsiderable.

The wound was carefully closed, and it healed in its entire extent by the first intention. The limb was placed on an interrupted splint, and it was kept for some days slightly flexed. In the course of six weeks the patient walked with help, and bore some weight on the foot. There was very fair motion of the limb, more especially of flexion and adduction; and now, twelve years after the operation, there is still useful motion.

Case II.

A. B., æt. 16, was admitted into St. George's Hospital in January 1872, on account of great deformity through bony ankylosis at the hip-joint.

The thigh was flexed upon the pelvis, and the knee was crossed over the other thigh, much in the same manner as in the previous case. Such was the position of the limb, that the foot was raised 7 inches from the ground.

Inflammation commenced when she was seven years old; and at twelve abscess formed. At fourteen years of age the hip was quite stiff.

Some few days after she had been admitted into the hospital I cut through the neck of the femur with a small saw, immediately above the great trochanter, having made the external opening only long enough easily to admit the saw. The bone was exceedingly solidified and thickened, and it seemed to be as hard as ivory. Twenty minutes were occupied in completing the section. There was not inconsiderable hæmorrhage from the wound. When the section was complete the limb could be fully extended; but the extended position could not be borne, and for several days the thigh was kept slightly flexed. The limb was placed on an interrupted splint, and the treatment was proceeded with in exactly the same manner as in Case I.; but suppuration took place, and an abscess formed at the junction of the upper with the middle third of the thigh. The splint was then removed, and extension was made by means of weights, and the limb was supported with sand-bags.

In the course of three months the patient could walk about the ward unsupported, and could bear her weight on the limb.

I have performed eight operations of this nature; some of them with a small external opening, only large enough to admit the saw—as is so much insisted on by Mr. Adams—and again others with a somewhat larger opening, about 1 inch in length; and I have always found that where the opening is small, and there is in consequence stretching and bruising of the adjacent soft structures, suppuration follows; but that where more room is allowed for the necessary movements in dividing the bone healing takes place very rapidly.

Thus it is desirable in all cases of subcutaneous osteotomy to make the opening in the skin larger than is absolutely necessary for the introduction of the saw or the chisel, so as to avoid injury to the soft structures. The external opening may always be so placed that when the operation is complete it shall not correspond to the section of the bone; and therefore the subcutaneous character of the operation will not depend so much on the size as on the position of the wound.

Some cases of section of the neck of the thigh-bone are recorded in which, after the section had been made, the deformity remained the same as before the operation. In these cases there would not have been a failure of the operation, and the deformity might have been removed, if the wound had been somewhat enlarged and a portion of bone taken away; either a wedge-shaped piece or a circular piece, as in Case I.; or otherwise the femur should not be divided through the neck, but below the trochanters, as is recommended by Mr. Gant.

Such cases as these which I have now brought before the Society, where the bone is much solidified and thickened, should only be divided with the saw. The chisel of Volkmann, which has been used with much success by Mr. Maunder, is only adapted to those cases where the bone yet remains tolerably soft.

Of course, where ankylosis is fibrous the bone is not so hard that it cannot easily be cut through with the chisel; but it perhaps yet remains a question whether it is desirable to have recourse to this cutting operation where deformity may be removed without the use of the knife.

Both the patients to whom reference is made were present at the rooms of the Society on November 24.

XVI.—*Subcutaneous Section of the Femur below the Trochanters for Osseous Ankylosis at the Hip-joint.* By John Croft. *Read January* 26, 1877.

GEORGE M———, a clerk, æt. 22, admitted into St. Thomas's Hospital on May 29, 1876.

A year ago he was well in health, and able to run and jump. In March 1875 he contracted a gonorrhœa, which lasted three months. In June he began to feel pain in the right hip. Soon after this the urethral discharge ceased and never recurred. In April he fell from a height of five feet and struck the right hip. To which of these causes the hip affection is to be attributed is not quite clear. The injury is the nearer in point of time. The pain lasted four weeks before he felt compelled to lie up. Swelling about the hip and thigh was observed at the end of June, and swelling in the groin at the end of July. In August he experienced pain on moving the hip-joint, but did not suffer from spasmodic pains at night. At the end of the month he was seen by a physician, who diagnosed a large abscess about the hip, but it was not until October that a puncture was made. A lancet gave vent to a large quantity of greenish matter. The discharge lasted up to February 1876, and then ceased. A scar ensued in the groin. During this illness he never 'shivered,' nor was troubled by cough, though he perspired very freely at night. No means were taken to keep the leg straight.

In April he was able to walk about with the help of a chair.

On admission he was pale and thin. He perspired very easily. The appetite and secretions were natural. The right limb was abducted and rotated outwards as far as possible, and the neck of the femur touched the edge of the acetabulum; at the same time the thigh was slightly flexed upon the pelvis. The femur joined the pelvis at an angle of 140° by Krohne's goniometer. No movement could be elicited at the joint. On July 3 the patient was placed under chloroform and examined jointly and separately by Mr. MacCormac and myself. The joint was pronounced to be firmly ankylosed by bony union.

The patient was very anxious to have something done for him, as it was impossible to regain employment as a clerk in

his present lame and deformed condition. His gait was very ungainly, and walking was difficult. As his health seemed stronger I thought he might safely be submitted to operation.

The scar in the groin united the skin to the front of the capsule of the joint and occupied the line which the saw or the chisel would have to traverse in section of the neck of the bone from the front. This caused me to prefer the infra-cervical operation. The bone below the trochanters in the adult is very hard and firm. That fact influenced me in preferring the saw to the chisel as a cutting instrument. The fact that many cases of section of the neck of the femur by the saw had resulted very successfully determined me to use the saw.

July 12.—Operation. Messrs. Adams and Gant were present. The operation was performed antiseptically. The external incision, about half an inch long, was valvular to the track made by the saw. The medium sized saw of Adams' pattern was used. The sawing occupied four minutes. The posterior fifth of the bone was broken by a movement of extension and rotation inwards. The limb was easily placed in a satisfactory position. A little blood oozed from the wound for a few seconds after the operation. As soon as this oozing appeared to have ceased the wound was covered by a compress of lint saturated with oil and carbolic acid (1 to 20), and a layer of antiseptic gauze was bandaged on. A bracketted long outside splint was then applied.

He was sick several times during the evening and following night. He did not suffer any pain. The temperature did not rise above 99° until after the 17th, or six days after the operation, when in the evening it rose to 101·6°. It continued above 100° for the next three days, and then began to decline. On the 25th, or four days later still, it was again normal. From that time it varied from the normal only occasionally and to an insignificant extent. During this period, from the 12th to the 28th of June the discharge from the wound was copious. At first it consisted of odourless blood-stained serum. Later it became purulent, and where it met the air offensive. He was free from pain so long as he was not disturbed. The dressings were painful, and therefore they were not so frequently repeated as they otherwise would have been. At the end of the month Mr. Wagstaffe kindly took charge of the patient whilst I was away for a holiday. On August 10 the antiseptic dressings were discontinued. After this a collection of pus was found in front burrowing towards

the anterior superior spine of the ilium, and an opening was made into it. When I returned early in September I found that the wound was discharging freely, and that he was very weak. However, he soon began to mend, and every week found him gaining strength generally and locally. On January 19, 1877, he was able to walk with the aid of a stick, and he left the hospital.

When he was presented to the Society he was still wearing a leather support to the hip, though he was sufficiently strong to walk without it. Soon afterwards he discarded that support. He can move about with ease, go up and down stairs quickly, and walk a considerable distance without fatigue. He volunteered that he would willingly go through a similar illness again for an equally good result.

It was believed that the case was the first on record in which the subcutaneous or valvular operation had been performed below the trochanters. The profuse discharge of serum after the operation was attributed to the use of the carbolic dressings at the time of the cutting incision and sawing. The contact of the carbolic acid solutions appeared to prevent primary union. It is a well-known fact that the use of this antiseptic is adverse to primary union of wounds.

XVII.—*Sequel to a Case of Aortic Aneurism for which the left Carotid was tied four years and a half before death.* By Christopher Heath. *Read February* 9, 1877.

In the Clinical Society's 'Transactions' (vol. v., p. 183) Dr. Cockle published a paper on 'Aneurism of the ascending portion and arch of the Aorta treated by Ligature of the left Carotid Artery,' the patient being a labouring man, æt. 48, who had had a pulsating swelling for nearly a year before. With Dr. Cockle's concurrence I applied a catgut ligature to the left common carotid on February 26, 1872, and the wound healed by first intention. The symptoms due to the pressure of the aneurism at once abated, and on June 7 the patient came up from the country again to show himself at Mr. Holmes' lecture on Aneurism at the College of Surgeons.

On March 28, 1873, the patient was again exhibited to the Clinical Society in a very satisfactory condition ('Trans-

actions,' vol. vi. p. 127). Some months after this he renewed his laborious occupation, and when I saw him at Cambridge in June 1875 there was a pulsating tumour projecting above the sternum, and much larger than before the operation. By June 1876, when I again saw him, the tumour had grown up to the level of the cricoid cartilage, and it was evident that it would shortly burst externally. This event occurred in September 1876; and being informed of it by the courtesy of Dr. Trimmer, of Gamlingay, I secured a post-mortem examination.

The specimen (deposited in the Museum of the College of Surgeons) shows a large sacculated aneurism arising by a large oval opening from the ascending portion of the arch of the aorta. This had extended laterally and encroached upon the left lung, by which a portion of the sac was formed. It had also eroded the sternum, the back of which was exposed in the cavity of the aneurism. The transverse portion of the arch of the aorta was somewhat compressed by the sac, which passed in front of it and then ascended in the neck beneath the sterno-hyoid and thyroid muscles, and presented an opening of the size of a five-shilling-piece opposite the cricoid cartilage. The left brachio-cephalic vein was obliterated. Owing to the state of decomposition in which the body was when the post-mortem examination was made it was impossible to preserve the clot in the sac, and the preparation is so far defective.

The left carotid was found to be obstructed with firm clot throughout, but the clot was not adherent except at the point where the ligature had been applied. No trace of the ligature was found, nor was there any appearance of division of the arterial coats, which could be traced in their continuity.

XVIII.—*Distal Ligature of the left Carotid Artery for Aortic Aneurism.* By T. Holmes. *Read February 9, 1877.*

A PATIENT, Esther S., æt. 22, in whom the left common carotid artery had been tied with carbolised catgut on October 21, 1875, on the distal side of an aortic aneurism, was exhibited to the members of the Society on February 9, 1877. The case is to be found fully reported in vol. ix. of the 'Transactions,' p. 114. Her general condition

had not greatly changed since the last report. She was suffering from constant hacking cough, preceded by a sense of irritation, referred to the left of the sternum, about the second intercostal space. Her breathing was about 28 in the minute. No abnormal lung-sounds were audible, but the aneurismal bruit remained very harsh and loud, so as to mask to a certain extent the valvular and pulmonary sounds. The pulse was 72, imperceptible in the left radial, but distinct in the ulnar artery. She suffered from palpitation and acceleration of the breathing on any slight exertion or excitement. She had remained in St. George's Hospital and in the Convalescent Hospital at Wimbledon since the last report, leading a very quiet, sedentary life, and taking an unstimulating diet, but without any distinct medical or surgical treatment.

On the whole, the case seemed to testify to the very great improvement which the operation had produced; in fact, there was little doubt in the mind of anyone who had watched the case in October 1875 that without the ligature of the vessel she would not have long survived. But the case also seemed to show plainly that no absolute *cure* could be expected in aortic aneurism so far advanced as this one was when first seen. Its phenomena were, however, quite consistent with the view (stated at p. 116 of the paper above referred to) that the stoppage of the carotid circulation in aortic aneurism may be followed by consolidation of the portion of the tumour through which that circulation used to pass, and that this may lead to a diminution in the size of the aneurism. It seems possible that it may even in some cases produce such a lining of the sac with coagula as will preclude any further growth of the tumour, or any liability to rupture, and thus bring about what I have called a 'practical cure' of the disease—meaning by this a condition in which the patient is freed from the danger of death by rupture or pressure on neighbouring parts, and is more or less able to perform some of the duties of active life. My patient was far, indeed, from having attained any such state, nor could so favourable a termination be expected in so formidable a condition of aneurism; but it seems possible that as our knowledge of the results of this operation becomes more exact it may take its place among the resources of medicine in less advanced cases of disease.

XIX.—*Case of Repeated Tracheotomy.* By PUGIN THORNTON. *Read February* 9, 1877.

THE patient exhibited is one in whom tracheotomy had been performed four times for syphilitic laryngitis. The case is remarkable also from the skin of the man's face presenting a discolouration very similar to that produced by the long-continued administration of nitrate of silver.

The patient, æt. 67, contracted a chancre in 1867, which was followed shortly afterwards by a secondary rash. No further symptoms appeared until 1869, when, concurrently with a rapid eruption, he had a sore throat, the voice being affected; followed some months after by difficulty of breathing. In 1870 the dyspnœa was so great that his medical attendant informed him that in all probability tracheotomy might have to be performed. This, by treatment, was avoided, it not being until 1871 that the first operation was performed. From some impediment,* probably in consequence of the tracheal cartilages having become ossified, it was impossible to insert a tube, and the wound was allowed to close in four days. The man, however, experienced great relief by the operation, and was able to return to his work in a fortnight, continuing at it until 1874, when tracheotomy was for the second time performed. There was great difficulty in inserting the tube on this occasion. It was worn for five or six weeks. At this time the face began to get the bluish appearance the man presents to the Society, but whether it was before or after the operation he cannot remember. Again in the following year recourse was had to tracheotomy, and again Dr. Dukes, of Spitalfields, who was also the operator on the previous occasion, experienced great difficulty in the insertion of the tube. When the canula had been worn about a month it slipped out one night, and it was not for many hours that another was put in. At the

* Mr. Maunder stated, after the reading of this paper, that he was the operator in the first instance on this man, and the case illustrated very forcibly one of the accidents more or less inherent to the operation, viz. a severe hæmorrhage from a vein, probably opening directly into the internal jugular. Owing to the circumstance under which the operation had to be performed the patient was not anæsthetised, nor under sufficient control. The bleeding occurred at the moment of introduction of the canula into the trachea on a pilot, the respiration being momentarily impeded and the veins of the neck rendered turgid. The bleeding relieved the apnœa so greatly that the tube was not necessary on this occasion, the patient becoming quickly convalescent. Mr. Maunder said he found no ossification of the cartilages.

end of a fortnight this tube (a Fuller's bivalve) had worked its way out through an abscess below the lower end of the operation-wound. At this time the man came under my care. He was then suffering from considerable dyspnœa, which, with his lividity of countenance, gave me the impression that he was in an alarming condition of asphyxia. On examining his larnyx I found that, though the stenosis (due to thickening and ulceration of the vocal cords and ventricular bands) was very great, yet, by enforcing absolute rest in bed and with specific treatment, an operation might possibly be avoided. It turned out so, and the man after a short time was out of danger. In July 1876, however, he came to me with such urgent dyspnœa that tracheotomy had at once to be performed. The ossification of the cartilages was so great that the knife could not make the slightest impression on them, and it was with the greatest difficulty that I divided them even by means of a saw. The tube on this account was not removed for the purpose of cleansing until the eighth day. It was taken out for good after it had been worn a little over two months. He is now able, he says, to walk ten miles without much discomfort. The discolouration of the face, which does not extend below the neck, except that it affects the man's hands, especially the finger tips, must be supposed to be due to former imperfect aëration of the blood and non-recovery of the cutaneous vessels afterwards. It is much less now than it was at the time of the fourth operation. The sounds of the heart are normal. I would draw attention to how misleading the lividity had been as to the urgency of the operation; and also to the advisability of always having a saw at hand when performing tracheotomy on the adult.

XX.—*Congenital Dislocation of one Knee forward.* By Rickman J. Godlee. *Read Feb.* 23, 1877.

In January of last year I was asked to see a child, then seven weeks old, who was said to have a kneepan at the back of the limb instead of in front. The child was well nourished and well-made in all respects, with the exception of its left lower limb. This was, however, though of the same size as the other, constantly held in a position of flexion of the hip and hyperextension of the knee, and was occasionally carried up spasmodically so as to lie across the chest and abdomen. The condition of the knee was remarkable. All

the ligaments were extremely loose, so that free movement was possible towards both sides and anteriorly, but owing to the spasmodic contraction of the extensors an actual dislocation of the tibia forwards had taken place upon the lower end of the femur, and great difficulty was experienced in producing anything approaching to flexion. The result of the dislocation forwards was to render the condyles of the femur more than usually prominent in the ham, and this had been mistaken by the mother for a patella in that position. The patella was present in the normal situation, but, I thought, was distinctly smaller than that of the opposite side. Although very little actual flexion of the joint was possible there was no difficulty in reducing the dislocation, and on doing this or on moving the joint laterally the peculiar soft grating sound which is characteristic of the rubbing together of two cartilaginous surfaces was distinctly to be heard and felt. The psoas and iliacus as well as the extensors of the knee were in a state of spasmodic contraction, and on manipulating the joint the spasm was considerably increased, so that an amount of hyperextension occurred quite sufficient to warrant the mother's apprehension that her child's knee had really been turned in the wrong direction. There was no club-foot, and nothing to point to nervous disease in other parts. The mother herself was very confident that the child had received some injury during delivery.

Looking upon the case as essentially allied to a talipes, I placed the limb at first upon a straight posterior splint whilst an apparatus was being constructed. This apparatus was similar to, though of course much smaller than the one now shown, and consisted of a sheath to enclose the thigh, and another to enclose the leg, joined on each side by a bar of metal, jointed opposite the knee, the joint being arranged so that the limb could not be quite placed in the position of normal extension. A weak accumulator was placed behind the knee to aid the flexors in overcoming the extensors. The rigidity of the apparatus prevented the occurrence of any lateral distortion and in fact overcame a slight tendency to eversion of the tibia. The flexors of the hip were left to take care of themselves. The mother was directed to apply frictions diligently to the limb.

The treatment has answered its purpose better than the condition of the limb at first would have led one to expect. Gradually the spasm of the muscles subsided, and the ligaments of the joint became firmer; so that at first the tendency to, and then the possibility of, hyperextension disappeared.

The limb in the meantime maintained its normal length, bu. remained for some time rather flabby as compared with the other. Now there remain only a slight excess of mobility over the opposite knee and a certain amount of weakness; the limb is often dragged when the child is crawling, but is sometimes used as actively as the other. There is also a certain amount of looseness in the left hip-joint, which was only noticed a short time ago, but which is probably the remains of a somewhat similar condition to that in the knee.

Cases of this kind are very rare, I believe. No mention of them is made in any of the ordinary surgical text-books, and the only reference I have been able to find is at p. 430 of the first edition of Mr. Hilton's 'Rest and Pain.'* He records a case of his own in which the patellæ were absent, but developed when the child was three and a half years old. Movement seems to have been very free, as the child used to walk bearing the weight on the condyles of the femur. No mention is made of spasm. No treatment seems to have been adopted, but yet an almost perfect recovery was made at last, with the exception of a little remaining weakness and a permanent deficiency in the size of the patellæ. Mr. Hilton also mentions a case of Sir Astley Cooper's, which also recovered, but no particulars are given.

I have also seen this year a case under the care of Mr. Barwell affecting both limbs, in which one patella was absent, and which curiously enough is combined with talipes of one side.

It is interesting to speculate on the probable condition of the ligaments in such a case. It seemed impossible, in looking at the joint in its over-extended and dislocated position, to imagine that the crucial ligaments were not either ruptured or deficient; but the near approach to recovery already arrived at, as well as the result of Mr. Hilton's and Sir Astley Cooper's cases, make it more probable that they were simply very much extended, and have since undergone contraction.

The recovery of Mr. Hilton's patient is certainly remarkable, but I cannot think that it should deter us from adopting some form of treatment in the earliest stages. I feel very little doubt that the condition is essentially one of spasmodic muscular contraction.

* It has since been pointed out to me that cases have been recorded by Guerin, Von Ammon, &c., and that some mention is made of the deformity in Cooper's Surgical Dictionary, in which several references of rather doubtful nature will be found.

XXI.—*A Case of Hydatid of the Lung.* By W. S. Greenfield, M.D. *Read February* 23, 1877.

Emma B., æt. 17, a dressmaker, came as an out-patient under my care at the City Road Chest Hospital, on March 28, 1875, complaining of pain in the right side and cough, with the expectoration of offensive fluid.

She was born and had always lived in Hoxton, and, with the exception of short visits to the seaside, had scarcely ever been away from home. Her mother stated that she was always fairly healthy, but had had inflammation of the lungs, scarlet fever, and measles when a child. Until four years ago she enjoyed good health; then she began to cough, and after a short time to expectorate 'phlegm,' and grow thinner, but had no night-sweats, and was able to continue her occupation. In 1874 she was under treatment as an out-patient, and was sent to Ventnor. There she stayed for three months. Whilst there she suddenly spat a teacupful of deep red blood, not at all frothy. In the early part of 1875 she again had an attack of pain in the right side, and again very slight hæmoptysis. She got better in a short time, but then the cough recurred, and she had a good deal of offensive expectoration, which was sometimes of a pink colour, and pain in the right side. Since that time she continued to cough, but with little expectoration, until four days before I first saw her, when pain in the right side returned, and with it the expectoration of a quantity of very offensive fluid, yellow, or at times pinkish in colour, which had continued.

When I saw her she was slightly anæmic, not very well nourished, but with no marked emaciation; there was an entire absence of clubbing of the finger-tips or incurvation of nails, and the aspect was entirely different from that either of phthisis or chronic empyema. The breath was very offensive, of almost gangrenous odour. The sputum I did not see at the time. Expectoration was said to be less abundant when the patient lay on her back.

Examination of the chest showed that the front was well-formed; there was no flattening of the supra- or infra-clavicular regions, and the breath-sounds in front were normal. The lower half of the right posterior region and the lower third of the axillary were absolutely dull, and over the upper half of the dull area was intense cavernous breathing, with abundant metallic crepitation, and some sonoro-sibilant râles. Over the lower half the respiratory sounds, vocal resonance and fremi-

tus were annulled. Towards the apex the percussion note was higher pitched than on the left side, and the breath-sounds very harsh.

I formed the diagnosis of a loculated empyema of some standing, which had probably opened into the lung, and possibly also had become more diffused; indeed, it seemed not impossible that it might originally have been an interlobar empyema. Believing that early operation is the wisest treatment in such cases, I directed her to come into the hospital as soon as possible, ordering her meanwhile creasote inhalations and some stimulant expectorants.

She came again a week later (April 4), and stated that three days after I saw her—viz., on March 31—she had a sudden attack of shortness of breath, and then felt as if she were suffocated—her mother, indeed, thought she would be, and 'clapped her vigorously on the back'—and then she brought up a piece of membrane the size of an egg, followed by about a tablespoonful of blood. The cough had continued, but less frequently, and the sputa had become less offensive, and not nearly so profuse. She brought up some pieces of membrane on April 2, three days after the first.

Under the microscope the membrane showed the characteristic lamination of hydatid membrane, and clusters of small white points, the earliest stage of growth of hydatids, and one or two incomplete echinococci. The chest was still dull from the angle of the scapula downwards, with almost entire absence of respiratory sounds over the dull area, slight friction alone being heard. Above there was harsh breathing, and some slight rhonchus and moist crepitation.

She was admitted on April 8, and a more thorough examination of the chest made on April 10.

The chest appeared symmetrical in front. Percussion note good and equal over both fronts, vocal fremitus good over both apices, slightly greater on right side; below somewhat feeble in both. Respiration good at both apices in front; somewhat harsher on right.

Right back dull in lower third, the dulness much more marked just below the angle of the scapula. At the extreme base was a narrow line of resonance. Dulness in the right axilla from the upper border of fourth rib downwards. Over the dull area the vocal fremitus and resonance were both very weak; breath-sounds audible but very weak. No cavernous breathing. Slight friction over dull area, and sonorous rhonchi over outer edge of scapula. The sputa on the 10th contained a large quantity of pieces of thin membrane, much

thinner than that previously expectorated; but none was found after this. The temperature was 100° on the evening of the 10th, but subsequently was not over 99°, and usually was normal or subnormal.

On April 12, two days later, the sputum was still abundant, consisting of thick brownish purulent fluid, with an offensive odour. A very marked change was now observed in the physical signs. The dulness continued as before, but over the whole dull area there was very harsh almost tubular breathing, whispering pectoriloquy and bronchophony. The whispered voice was most distinctly audible at the angle of the scapula, and over a circular area of about 2½ inches in width outside it. There was only very slight pain, not increased by coughing. Liver dulness normal in front. No other marked symptoms.

Five days later (April 17) the sputum was almost *nil*. The patient said she felt and indeed looked perfectly well. Physical signs almost unchanged. On the 22nd the cough and expectoration had entirely ceased, and only slight pain remained. The side was firmly strapped, and the patient allowed to get up, though kept quiet.

On May 8 the physical signs were but little altered; the dulness had slightly diminished, but there was still coarse crepitation audible over the lower and outer one-third of the axillæ and back, and whispering pectoriloquy in the same region as before; and this continued till May 18, when she was discharged, apparently well as far as symptoms were concerned. It was observed that the whispered voice was especially audible during expiration, and occasional amphoric echo was heard.

I saw the patient again on October 21, 1876. She was then in good health, and free from cough. The percussion of the chest was good throughout the right side, except over a small area just at and outside the angle of the scapula, where it was slightly high-pitched. The whispered voice sound was still distinctly audible over this region in a limited area, not more than two inches in diameter, and occasional coarse crepitation was heard around this area. The rest of the physical signs were normal.

I again saw her on January 20, 1877. She then looked somewhat thinner and paler than before, but said that she had thought herself quite well until lately, and was entirely free from cough; but for the last two or three weeks she had had some cough and pain in the right side. She thought she had been losing flesh, and was decidedly thinner.

The greater part of the chest appeared in every respect

healthy, but at the angle of the right scapula, and just outside it, was still a small area where the percussion note was somewhat high-pitched and the respiratory sounds exaggerated and there was distinct whispering pectoriloquy. There was also some friction over this area. She said that she had spat a small clot of blood two or three weeks before, for the first time since last year, but there was no expectoration. The right semicircumference of the chest is now one inch greater than the left. There is no sign whatever of retraction of the intercostal spaces or flattening of the side.

I have thought this case of sufficient interest to bring before the Society, both on account of the comparative rarity of primary hydatids of the lung, and in order to raise certain questions as to the prognosis and treatment of such cases.

As regards the diagnosis, the only question that can arise is as to the situation of the cyst, whether it was originally in the lung or in the pleura, or whether it may possibly have been situated in the liver, and perforated the diaphragm, and thus had been evacuated by the bronchi. It is commonly stated that the most frequent position of hydatid cysts of the lung is in the lower lobe of the right, and hence some have believed that they migrate from the liver in every case. But this view is not borne out by recorded cases, or by the statements of those who have seen most of the disease; indeed, it seems to be grounded rather on theory than on fact. The evacuation of hydatid cysts of the liver by the bronchi, or the perforation into the pleura and consequent empyema, are of not infrequent occurrence, and in some cases the diagnosis between these conditions and primary hydatid of the lung is very difficult; and this fact may have led to some confusion and error in the statistics of recorded cases.

The frequency of occurrence of hydatid cysts in the lungs seems to bear some ratio to their general prevalence. It is well known that in some parts of Australia, especially in the colony of Victoria, hydatids of the lung are very common, but even there the liver is much more frequently affected than the lung, the latter organ coming next in order.

Thus, in a paper in the 'Melbourne Medical Record' (March 6, 1875) it is stated, that out of 100 cases of hydatids 70 would be hepatic and 12 pulmonary, the remaining 18 being in other organs, or multiple; but of 74 cases of hydatids of liver and lung recorded by Dr. McGillivray in the 'Australian Medical Journal' (August 1865 and March 1867) 9 were in the lung.

Where, as in the present case, the position of the cyst is

such as to make it possible that it may have originated in the liver, the diagnosis must rest on the general history of the case, the physical signs, and the character of the fluid expectorated.

It seems to me certain that the cyst was in the lung itself, probably in the middle or upper part of the lower lobe. It will be observed that there was an area of comparative resonance below the dulness posteriorly even at the time when that dulness was most extensive. But the chief grounds for the diagnosis are: 1, the entire absence of bile-staining of the membrane, and of the peculiar odour of suppurated hydatids of the liver; 2, the complete expectoration of the membrane; 3, the long duration of lung-symptoms; and, 4, the course of the physical signs. It will be observed that at first there was very extensive dulness with physical signs pointing to a loculated empyema opening into the lung; that with the extrusion of the cyst the signs of empyema disappeared; that at the period of evacuation there was almost total loss of breath-sounds, due, no doubt, to pressure on the bronchus or impaction in it of portions of the cyst; then, as soon as the membrane had been completely evacuated, the signs of a cavity reappeared and persisted in a gradually narrowing area, which was at no time at the base of the lung, and gradually went higher up, and that no signs of empyema or pleurisy persist. In fact, the course of the case was consistent with the presence of a cyst in the middle of the lower lobe, inflammation within and around it, perforation into bronchus, evacuation, and a gradually contracting cavity.

As bearing on the general question of the situation of hydatid cysts of the lung I may briefly mention the chief facts I have been able to gather on this point. According to Rokitansky they are either in the upper or the lower lobe. In the paper in the 'Melbourne Medical Record,' above quoted, it is stated that hydatids are more common in the upper and middle lobes than in the lower. In a case brought before the Pathological Society by Dr. Quain in 1853, for Dr. Black, of Chesterfield, the cyst, which was in the lower lobe of the left lung, was evacuated by the bronchus, and cure resulted. M. Widal has recorded ('Gaz. des Hôpitaux,' 1872) the case of a man, æt. 22, in whom there were two cysts, one in the right middle, the other in the left lower lobe, both of which ruptured, one into the bronchi, the other into the pleura. Lebert gives a case where the cyst was in the upper lobe of the left lung. He states that they are usually in the pulmonary tissue, and not in the pleura. In the Museum of St. Thomas's Hospital there are only two specimens, one of

multiple hydatids, and another of a single cyst in the middle of the lower lobe of one lung—which lung is not stated.

The *prognosis*, where the cyst has been evacuated, is generally considered favourable, but I do not know how far this would be borne out by facts.

The dangers appear to be, re-growth from a part of the membrane remaining, the presence of another cyst in the same or another part, and the possibility of some changes occurring in the lung from the retraction of the cavity. As to the latter I believe that cases have been observed in which an aneurismal dilatation of a branch of the pulmonary artery has resulted either from the traction of the cavity, or from the loss of support due to its presence, and has led to fatal hæmoptysis. I have not, however, found any such case recorded.

I do not know for how long the cases of apparent recovery after evacuation have been watched, and this must form an element in the value of the records. In a paper in the 'Berliner Klinische Wochenschrift' (Nos. 3 and 4, 1872) Lebert records a case in which a cyst existed in the left upper lobe of a man, æt. 42; the hydatids were expectorated, and apparent recovery ensued. About five months later pulmonary symptoms recurred, which were after a while relieved by a fresh discharge, complete cure following. (His two other cases were: 2nd, a female æt. 23, cyst discovered only after death; 3rd, cyst ruptured into pleura, and produced fatal pneumothorax.) Dr. MacGillvray mentions nine cases of hydatids of lung; in five the cysts were expectorated, in two they ruptured into the pleura, and in two the cysts were punctured.

But the facts are too few to form any very definite opinion of the present risks. At present it is evident that the cavity has not completely closed, and the return of pain in the side with cough and slight hæmoptysis, and the presence of enlargement of the side and of some slight friction in the neighbourhood of the cyst, lead me to fear that some further changes may ensue.

Treatment.—As to past treatment there is little or nothing to be said. No further treatment appeared to be needful or justifiable for the time; and the parasiticides, which have been vaunted as preventing the further growth of hydatids being of more than doubtful efficacy, I did not think it worth while to try them. As to the present condition it should, I think, lead to careful watching of the case. But then arises the question, whether it will be desirable to

employ the treatment which has met with so much success in Victoria, viz. puncture with a fine aspirating needle as soon as any decided physical signs, such as dulness and diminished respiratory murmur, are observed, or whether to wait for more definite symptoms. Having in view the danger of rupture into the pleura, I am inclined to early exploratory puncture, but upon this point I should be glad of the experience and opinion of the Society.

Note.—Since this case was read Dr. Duffin has kindly lent me the original papers by Dr. Bird, of Melbourne, to which reference was made.

A complete account of the history of the subject, with an analysis of all the recorded cases, is to be found in a work entitled 'Kystes Hydatiques du Poumon et de la Plèvre, par Dr. A. W. Hearn; Paris, Delahaye, 1875,' of the existence of which I was not aware when the case was read.

I must also here confess with shame that I had completely overlooked Trousseau's article on this subject (Syd. Soc. Trans., vol. iii. p. 303). The case here recorded presents a very striking parallel with the case on which Trousseau's lecture was based, even in some of the minuter details. But clubbing of the fingers, or 'Hippocratic deformity,' on which Trousseau so strongly insists in his case, was here entirely absent, notwithstanding the length of time which the disease must have existed.

XXII.—*Aneurism of the Popliteal Artery; Ligature of the Femoral Artery. Recovery from the operation. Death on the twelfth day from embolism of the Basilar Artery. Atheromatous Aorta and Mitral Valve.* By A. T. Norton. *Read February* 23, 1877.

CHARLES P., newspaper agent, æt. about 40, presented himself at the out-patient department of St. Mary's Hospital, on August 5, 1876. He complained of a lump behind the knee which caused him pain when walking. On examination this lump proved to be a popliteal aneurism about the size of a Tangerine orange. He was immediately admitted into the hospital, sent into the ward, and a tourniquet applied to the femoral artery in Scarpa's triangle.

History.—He stated that about two months previously he had fallen down in a fit in the street, and that shortly afterwards, within a few days, he noticed a small swelling behind the knee, which had continued to increase in size. I could

learn but little about the character of the fit, except that he was unconscious for a short time, and that he was giddy and ill for some days after. He had not had another fit either before or after the one referred to.

Treatment.—I ordered the tourniquet to be applied at different parts of the femoral artery, and to be kept on for an hour at a time before being changed to another part of the vessel.

The man, however, refused to allow the tourniquet to remain in any position for more than a few minutes.

It was impossible to stop the circulation through the artery by means of flexion of the knee joint, because any extent of flexion produced intense pain, by pressing on the aneurism, and the patient refused to undergo it.

I therefore resolved to tie the artery on the following Wednesday, August 9, the operating day at the hospital. The operation was performed in the usual manner, in the apex of Scarpas' triangle, a catgut ligature being used, but the ligature was not closed in the wound; one end was cut long, and hung out from the wound; a lint of carbolic oil was applied to the surface, the limb enveloped in cotton wool, and the patient returned to bed.

My object in allowing a tail of the ligature to remain external to the wound was this. I have seen, in cases in which the wound has been allowed to close over the ligature, a considerable amount of induration in the course of the vessels followed by suppuration and abscess; but I believe, as was the case in this operation, that the extension of inflammatory action along the vessels may be prevented by allowing any fluids formed to escape at once along a tail of the ligature, whilst the suppuration may be limited by a disinfective treatment. It is obvious that to limit inflammatory action along the course of the femoral vein is a matter of importance.

At 6 o'clock the temp. in the axilla was 98·8°; pulse 96; and respiration 20. He complained of no pain, and the limb was warm. Temp. between toes of the affected limb was 99°, on the left side 98·2°, so that the affected limb was nearly a degree warmer that the other.

At 11.30 the temp. of the two feet was nearly equal, the right or affected side being 100·2°, the left 100°, whilst the temp. in the axilla was 101°, the pulse being 106. Chloral was ordered, should he not sleep.

August 10.—He had not slept well, and complained of headache; the tongue was furred. Temp. 101°; pulse 112. There was no pain or tenderness over the wound.

Towards the afternoon the patient became restless, desiring to get out of bed, though at the same time he appeared capable of reasoning in conversation.

A watcher remained by his bedside, to keep him from sitting up.

Temp. in the axilla had gone down to 100·4°, whilst in the right foot it had risen to 100·6°, the left foot being at 100°. For two days the temp. of the affected limb had been above that of any other part of the body.

On the 11th he was quiet, and passed a good night. The wound was examined, and two wire sutures removed. About two drops of nearly clear fluid were squeezed out of the wound along the ligature; and as there was slight induration I thought it desirable to apply warmth, and ordered a poultice made with carbolic acid lotion.

There was no pain in the wound. The bowels had been relieved. Temp. 99°; pulse 100. The patient relished his food, which was milk, beef-tea, and bread.

From this time he continued to improve, the temp. standing at about 98·8°, and the pulse 84. There was no induration about the wound in twenty-four hours after the first application of the poultice. The tail of the ligature was pulled out on the fifth day after the operation, but the knot remained, and was never seen. By Friday, the 18th, a natural pulsation was observed at the ankle and on the dorsum of the foot.

He now had a chop every day for dinner.

Throughout the whole time no discharge appeared in the poultice, but each morning two or three drops could be pressed out by the finger from the aperture where the ligature had been. On Sunday, the 20th, he said he had not been able to sleep all night, in consequence of a severe thunderstorm which happened on that night. He, however, enjoyed his breakfast as usual at eight o'clock.

Shortly after breakfast, and without any warning, he became unconscious, and the nurse, who immediately ran to him, states that he was very pale. In a few minutes he again became conscious, spoke to the nurse, and moved himself round in the bed. The house surgeon was sent for, and ordered some brandy, but again he immediately became pale, unconscious, and died at half-past nine, the whole period of time from comparative health to his death being only a few minutes.

From the account of the house-surgeon and nurse I gave the opinion that a clot must have been thrown into one of the vessels supplying the brain, bringing about the first

attack of unconsciousness; that there must have been formed an immediately collateral circulation, a proof that the clot had not gone beyond the circle of Willis; that as the circulation in the brain became re-established and the heart regained its action the clot was again driven on to a position in which a collateral circulation could not be readily established.

At the post-mortem examination we at once found the cause of death in the basilar artery. A clot occupied the basilar artery, causing it to bulge considerably, and extending from a third of an inch in the right vertebral artery, which was less than half the size of the left, as far as the division of the posterior cerebral arteries. Brain-substance healthy, but all the larger cerebral vessels showed patches of atheromatous deposit.

The lungs were congested, but otherwise normal, and there was a post-mortem clot six to eight inches in length in both pulmonary arteries. The aorta was much thickened and dilated, and the inner wall was rough with atheromatous patches. The mitral valve was thickly fringed, and a part calcified. On the right thigh was the scar of the wound, four inches long, healed, with the exception of a small pinhole aperture. No pus could be squeezed out of this aperture. There was no induration about the wound. On opening the artery, above the ligature there was a firm clot three-quarters of an inch in length, adherent. A second clot was found below the ligature, about half an inch in length.

An aneurism about the size of a bantam's egg was connected with the popliteal artery an inch and a half above its division into the two tibials. The sac of the aneurism was occupied by a firm clot.

Remarks.—I think the post-mortem examination corroborates the opinion I previously formed. It would appear that a clot was cast up the right vertebral artery, which was much smaller than the left, where the two joined together to form the basilar; that it probably lodged in the right vertebral artery, and thus caused a momentary unconsciousness; that the collateral circulation was soon established and the heart regained its power, and that the clot was then driven on into the basilar, completely closing the posterior cerebral arteries and the arterial supply of the pons, by which death was brought about almost momentarily. No other clots were found, nor could it be made out that any part of the brain had suffered in consequence of previous blocking of vessels.

Probably the first 'fit' complained of was also due to embolism, which had been ultimately absorbed.

It appears also that the cause of death, which may be considered the embolic clot, was in no way connected with the operation, but probably was formed by the fringed mitral valve. The operation was, therefore, a complete success.

Further, it may be mentioned that, with regard to the operation, the whole wound healed by first intention, except the pin-hole aperture in which the ligature lay, and that the amount of pus formed was barely more than a drachm, none escaping from the wound without pressure. The treatment throughout was antiseptic, but the spray was never used.

XXIII.—*Case of Contraction of a Tinkling Cavity in Chronic Phthisis.* By C. THEODORE WILLIAMS, M.D. *Read March* 9, 1877.

WHILE instances of contraction of cavities in phthisis are tolerably common, it is very rare to witness that process taking place when the cavity has reached such dimensions as to give rise to tinkling sounds, on account of the large amount of atmospheric air present. We generally expect these patients to gradually deteriorate and sink, either exhausted from the large amount of suppuration, or worn out by the pyrexia and wasting. I have recorded one case somewhat similar to the present in vol. v., p. 31 (Case III.), and I now present to the Society for examination another patient, in whom the process is going on, whose history is as follows:—

George A., æt. 48, married, a workman at a foundry, was admitted under my care into the Hospital for Consumption, January 29, 1874. Seven years previously, when at foundry work, he had hæmoptysis to the amount of 6 oz., and was confined to his bed for six months. He, however, gradually recovered, and lost his cough. Three years ago his cough returned, but has been most severe during the last year, during which time he had night-sweats and marked loss of flesh.

On admission his cough was slight, expectoration moderate, muco-purulent, his appetite good; temperature and pulse normal; weight 9 st. 7 lb.

Physical Signs.—Tinkling cavernous sounds audible over the upper third of the right lung, front and back,

with some dulness. He remained in the hospital two months, during which period he gained 12lb., but exhibited no marked change in physical signs. After leaving he remained tolerably well till the following winter, when he was again laid up for some months. He did not return to foundry work, but was at times sufficiently strong to assist in mending roads. He was re-admitted December 28, 1876, two years and nine months after his discharge. Slight hæmoptysis had occurred two months previously. His cough was moderate and expectoration slight, but his appearance attracted great attention, from the apparent deformity of the right side of his body.

The right shoulder was depressed, and there was marked shrinking of the right half of the chest, the measurements of the circumference of the chest being:—

	Right side.	Left side.
At level of second rib (with arms extended) . .	16 inches.	17½ inches.
At level of nipple . .	16¼ „	17¾ „

On the right side, flattening of upper front, and some dulness in outer half, where distant cavernous sounds are audible, more especially in axilla; dulness from fifth rib downwards, and cardiac sounds audible to right of sternum, indicating heart to be drawn over and the liver to be drawn up.

There is fair resonance over the inner half of the right front, indicating the left lung to be drawn across to the right side. Posteriorly some dulness is detected over the upper third of right lung, and distant cavernous sounds are heard over the suprascapular, scapular, and interscapular regions. Some crepitus is audible at the posterior base. Breathing in the left lung is harsh in parts. The spine has well-marked curvature towards the left side. The patient has been in the hospital nine weeks, and is steadily improving in general health. He has gained 8lb. His cough is moderate; pulse and temperature are normal; his breath is very short on exertion.

Remarks.—The chief features of interest in this case are—

Firstly, the size of the contracting cavity. As far as can be ascertained it involved the greater part of the upper lobe of the right lung, and its contraction was directed towards the posterior wall of the thorax, where probably some adhesions existed, which formed the fixed point towards which the contractile process usually directs itself. This is proved by the cavernous sounds being more audible in the posterior regions.

Secondly, the remarkable degree of deformity the contraction gave rise to. The displacement of the heart and liver is common in these cases, but it is rare to find curvature of the spine caused in this way. This change, so common in old pleurisy, is almost unknown in cavity contraction; and when taken in combination with the shrinking of the chest-wall is only another proof of the enormous size of the cavity which underwent contraction.

XXIV.—*Three Cases of Gas in the Peritoneal Cavity.*

By R. J. Godlee. *Read March* 9, 1877.

My reason for bringing short notes of the three following cases before the Society is because the condition found in them is, as far as I know, not mentioned in the text-books, and is certainly seldom pointed out to the student at the bedside. The possibility of its occurrence is, I believe, recognised by some, and its importance is undoubtedly very great for the surgeon in at least one serious operation, while it can hardly fail to be of diagnostic value to the physician. It is, that gas may exist in the peritoneal cavity without the occurrence of perforation of the bowel.

The first instance is that of a man æt. 46, who was in University College Hospital in August 1872. He had been eight years in the army in the Mauritius and Madras, and had had dysentery in 1863. He had suffered from syphilis in 1865, and had several scars on his body as well as sinuses leading to two carious ribs. He was the subject of phthisis and advanced albuminoid changes, with ascites.

The abdomen was considerably distended, and there was movable dulness in both flanks and in the lower part of the abdomen as high as a point midway between the umbilicus and pubes. The large albuminoid liver could easily be felt, reaching down to within one and a half inches of the umbilicus, but the area corresponding to it had a tympanitic resonance except quite at the upper part. It was only on pressing the finger through this tympanitic region that the liver could be felt, and then a dull percussion note was obtained.

At the autopsy no gut was found superficial to the liver. There were several ulcers in the colon above the sigmoid flexure, but no perforation. There were some albuminoid

glands at the hilus of the liver, which pressed upon the portal vein. There is no mention in the notes of the state of the peritoneum, but I am nearly sure there was no recent peritonitis.

The second case was a woman æt. 61, who was in University College Hospital in May 1874. She was suffering from obstruction of the bowels from tumour, which had been complete for three weeks. She was very obese, and much distended, and suffered from paroxysms of severe pain. There was constant vomiting. Temp. 99·4°; pulse 112· There was a little dulness in the left flank. On this patient Mr. Heath performed colotomy. The large quantity of fat, superficial and subperitoneal, rendered this difficult. At first a mass of fat was taken for the colon and then a protrusion of peritoneum distended with gas made its appearance in the wound. It was thought to be the colon, but as it did not look quite natural another search was made; but though the kidney was felt nothing else to represent the bowel could be found. After a short consultation with one of his colleagues, who was present, Mr. Heath passed the needles and then punctured the peritoneum. After the escape of a large quantity of gas and a little grumous fluid the distension subsided, and the bowel was easily found and opened.

She died next day, and at the post-mortem examination no perforation could be found, though it was carefully searched for. There was very early general peritonitis and a little rather older, with some lymph round the cæcum corresponding to an ulcer as large as a threepenny-piece filled with slough in the mucous membrane. The bowel at the seat of stricture was quite entire.

The last case is that of a relation of my own, æt. 72, upon whom Mr. Heath performed colotomy nearly five weeks ago. The obstruction had lasted three weeks, and there was much distension. With the two first cases in my mind I strongly suspected the same condition here, because there was scarcely any, if any, liver dulness, and the percussion note over the whole abdomen was about equal.

The first thing that presented in the wound was what may be described as a knuckle of peritoneum distended with gas and containing a little clear fluid. We were alive to the condition of things, and Mr. Heath had no difficulty in finding the gut and opening it in the usual way. Some little care was needed, however, to retain the peritoneum in the wound. As the patient is now alive, and had only slight tenderness of

the abdomen after the operation, it is safe to conclude that there was no perforation in this case.*

It would be out of place to enter into a discussion as to the conditions which may give rise to such an escape of gas; but I may say that I do not see why exosmosis should not account for it. The cases are brought forward with the intention of pointing out an accident which may happen to anyone in the course of colotomy, and with the hope that they may elicit from members of the Society some expression of opinion as to the rarity or commonness of the condition of things described.

XXV.—*A Case of Neuro-Retinitis followed by partial atrophy of the optic disc, with observations on the perception of colour.* By B. Thompson Lowne. Communicated by Wm. Cayley, M.D. *Read March* 9, 1877.

H. C., a well-developed, well-nourished young lady, æt. 18, consulted me on October 13, 1876.

She complained that she suddenly lost the power of vision with her right eye, which she had always considered her best, and had used it for optical instruments, especially the kaleidoscope. She first discerned the dimness on the previous morning whilst in bed, and had pain over the brow; this ceased when she arose and has not since returned. She has seen no halos or spectra.

Present Condition.—Says that there is a dark cloud over the greater part of the field of vision of the right eye. She can see a little when she does not look at an object. Reads $\frac{14}{70}$, but sees the last letter in the line first and reads towards the first; almost reads $\frac{14}{50}$ in the same manner. The field is, therefore, best on its outer side, corresponding to the inner side of the retina. The field is not contracted, tested by moving my hand, but she sees best in its outer half. Tension of the eyeball normal. Reads Jaeger 20 easily, and Jaeger 19 with difficulty. Left eye $v = \frac{20}{20}$. Emmetropic. Reads Jaeger i.

Ophthalmoscopic Examination. — Left eye normal; very sensitive to the light of the ophthalmoscope.

* This was verified at the autopsy; the patient died ten weeks after the operation.

Right Eye.—Says she hardly sees the light of the ophthalmoscope, except in the extreme periphery. Disc congested, its edges very indistinct, surrounded by fine striated ecchymoses and white irregular patches of exudation, which entirely conceal the vessels in places disc-swollen, so that it is most distinctly seen with $+\frac{1}{10}$th in the direct observation.

The rest of the fundus has scattered white dots and irregular patches, in groups or singly, especially in the region of the yellow spot.

Her mother states that her health is very good; that she is suffering from no uterine irregularity. There is no albumen in her urine. She has not over-worked her eyes. Is not subject to any headache or illness.

Family History.—Has elder and younger sisters, both healthy. Her mother had ill-health about the time of her birth; remembers to have miscarried three times before and once shortly after her birth; never miscarried at any other time. Her youngest child has suffered from phlyctenular ophthalmia. Suffered with phlyctenular ophthalmia herself when a girl, but never had anything else wrong with her eyes. Father living, and well. An uncle on the father's side is said to be suffering with glaucoma. I could learn nothing else material. These facts were elicited on October 25.

Treatment.—Hirudines ii tempori. Pot. Bromid. gr. v. ter.

Oct. 25.—Vision with the right eye worse. Sees no type at 14 or even 10 feet. Can make out Jaeger 20 only with difficulty by commencing at the right.

Ophthalmoscopic examination.—Disc more normal, but still swollen and hazy at the edges. Hypermetropic $\frac{1}{10}$. A broad white line is seen distinctly fringing the larger vessels. White spots in the periphery of the fundus larger, more distinct; several cloud-like patches and one large opaque circular spot in the outer part of the fundus.

No glass improves vision.

Pot. Iodid. gr. v. ter, added to the medicine.

Nov. 1.—H. C. returned to me rejoicing at the improvement of her vision. She reads Jaeger 16 at 8 inches easily. No ophthalmoscopic examination was made.

Nov. 8.—Reads Jaeger 8 at 8 inches easily, but complains voluntarily that she cannot see red objects with the affected eye. Says the red berries of a Solanum on my table are not visible with the right eye. Knows that her vision

for colour was quite good in that eye from having used the kaleidoscope with it.

Ophthalmoscopic Examination.—Fundus more healthy. The disc appears like that of the other eye; is dimmed by $+\frac{1}{30}$, showing that the swelling has subsided. The white spots are less numerous. No cloud-like patches remain, but a white line is still distinct on either side of the large vessels.

Tests with Colour Sheet.—Scarlet brighter than any of the colours on the sheet appears of a very faint orange colour. Pale blue, green, and pink are recognised, but look faint and dim. Dark green looks nearly black. Blue looks like violet, and can scarcely be distinguished.

Treatment.—She complains that the iodide makes her feel sick. Ordered Ferri et quiniæ cit. gr. v. ter die.

Nov. 15.—Vision rapidly improving; reads Jaeger 4 easily at 8 inches, and can read Jaeger 2 with difficulty. Sees things by direct vision.

Ophthalmoscopic Examination.—Fundus nearly emmetropic. White spots and patches have disappeared.

The colours on the sheet nearly as before, but scarlet is more distinctly orange. All the colours with the unsound eye look like the same seen through violet glass with the same eye.

Red fades to orange.

Green very dark, nearly black.

Blue like violet.

Yellow looks dull.

The periphery of the field is very much more sensitive to light than the centre. The movements of the iris are normal.

Nov. 29.—Reads Jaeger 2 fluently $v=\frac{14}{20}$. The vision of colours as before.

Ophthalmoscopic Examination.—Disc pearly white. Veins too small, while line on either side of the veins very marked. Periphery very sensitive to light in comparison with the region of the yellow spot. Appearance of the fundus otherwise normal.

From this time I saw nothing of my patient until Feb. 7, 1877.

Feb. 7, 1877.—States that she has been laid up during the greater part of January with a severe attack of jaundice, but has quite recovered. Now looks very well.

Vision as nearly as possible as when last seen. Has had no xanthopsia.

I now tested her for the first time with the spectroscope,

and she described the spectrum, first with the right and afterwards with the left eye, as follows:—

Right eye.	Left eye.
Purple.	Dark purple.
Pale yellow.	Blue.
A narrow flash of red occasionally.	Green.
	Yellow.
	Red.

She expressed great surprise at the contrast, saying that the colours were very beautiful, and was especially surprised to find green amongst them.

She stated that the green of the spectrum looked pale yellow and the dark green on the colour sheet nearly black.

Remarks.—I think there can be no doubt this case is to be regarded as one of neuro-retinitis, or neuritis ascendens, as it is sometimes called, but I am entirely at a loss to determine its origin. Four alternatives present themselves to my mind. Is the case one of congenital origin? Is it connected with some obscure form of blood-poisoning or blood-change having some connection with the subsequent attack of jaundice? Is it one which is due to some central lesion of the nervous system, or must it with our present knowledge be regarded as an idiopathic affection?

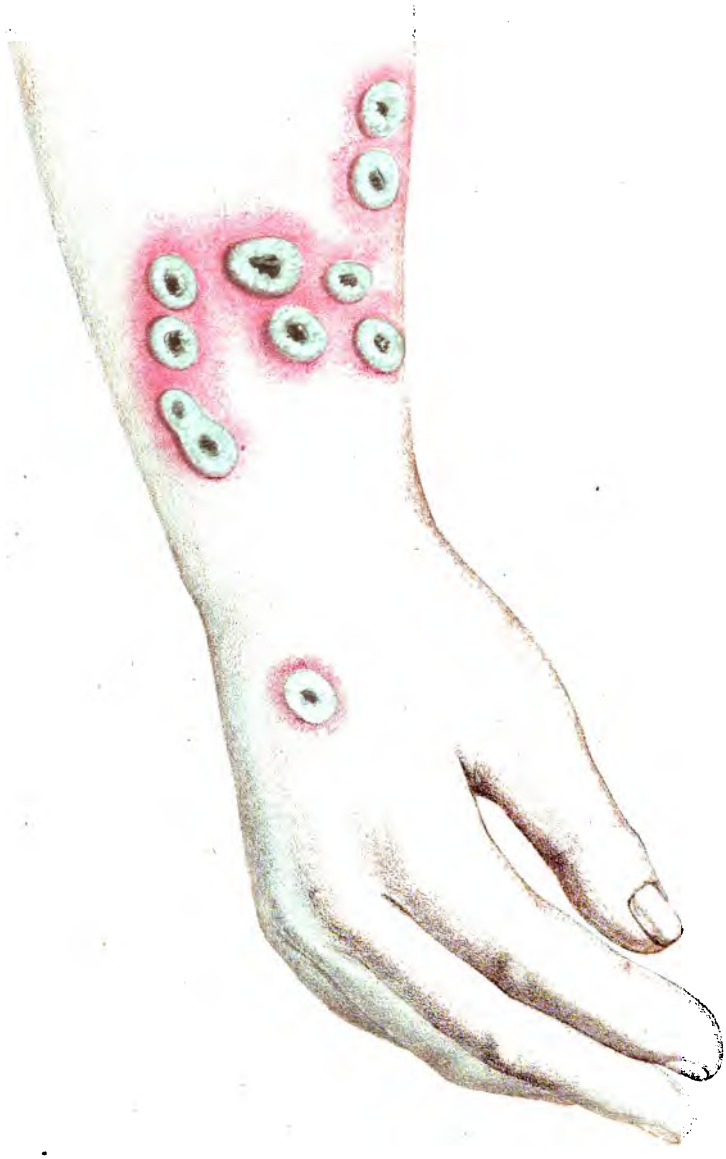
First, the mother's miscarriages, and the rapidity with which the changes gave way under the influence of iodide of potassium, favour the first view. Still I am little inclined to believe it can be explained on such an hypothesis. I doubt very much the existence of a congenital taint capable of producing such grave phenomena in an otherwise well-nourished and well-developed patient.

With regard to the second hypothesis, the fact that only one eye was affected renders it improbable that it was due to a blood disease. The fact, however, that partial colour-blindness sometimes occurs in jaundice,* and the existence of retinitis as an accompaniment of renal disease, render the hypothesis possible.

The existence of some central lesion is another view, which, although unsupported by direct evidence, is rendered possible by the pain complained of at first and the subsequent jaundice, although I am as little inclined to this view as to the others.

Lastly, saying it is idiopathic, in the sense that it is due

* See a paper by J. Wickham Legge, M.D., and V. Harris, M.D., in the last volume of the Bartholomew's Hospital Reports.



R. Mintern Chromo. lith. Mintern Bros. Imp.

Mr Langtons case of Vaccinia communicated from Grease of Horse.

to unknown causes, amounts to confessing our ignorance, and this commends itself chiefly to my mind. I admit, however, the possibility of either of the foregoing views being correct.

The case is especially interesting on account of the high intelligence of the patient having allowed me to make very careful observations on the colour phenomena, and from the fact that these closely resemble the phenomena in a case of complete congenital colour-blindness which has fallen under my notice, and from the near relation of the phenomena to those described by Dr. W. Camerer,* who is himself congenitally colour-blind; except that in both cases of congenital colour-blindness there is less power of perception of colour than in this acquired case, and far greater amity of vision. Again, in the congenital cases the eye is not only relatively but absolutely more sensitive to the extreme blue and violet rays than the normal eye, whilst in the acquired case the power of perceiving violet is deteriorated.

Lastly, Drs. Legge and Harris make the same observations about green, in a case of jaundice, that I have made in my patient. These observations are completely independent, as their paper has only just come into my hands.

XXVI.—*Rare Eruption on the Forearms, the Result of Infection from a Horse.* By JOHN LANGTON. *Read March* 23, 1877.

THOMAS K., æt. 22, a healthy young man, was admitted into Abernethy Ward, St. Bartholomew's Hospital, on March 20, 1877, with a rare eruption of the dorsal surfaces of both forearms.

The patient was a groom, and he stated that seven days previous to his admission he had the charge of a horse suffering from inflammation of the legs and cracked heels, from which there was no discharge, but only a foul smell.

The appearance of this eruption being so like that produced by vaccination, I questioned him, when he stated that there was a child living in the same house who had been vaccinated a week prior to his taking charge of the

* Zehen den Feb. 1877.

horse. He is very positive, however, that he never came in contact with the child or with any clothing belonging to it. The patient had been vaccinated in early infancy, and bore good scars.

The day after he began to tend the horse (and eight days after the child had been vaccinated) he first noticed, where the skin had been chapped, an eruption of small red spots upon his wrists and right hand. Soon after the appearance of the eruption he suffered from pains in his head and limbs, accompanied by some feverishness; these symptoms soon subsided, and at the present time his general health is not in any way disturbed.

On the seventh day after the appearance of the eruption he came under my notice, when he was admitted, so that the progress of the case might be watched.

On examination I found on the dorsal surfaces of both forearms, about 2 inches above the wrists, a number of large vesicles resembling those produced by vaccination. On the left forearm there were seven vesicles, and on the right ten, one of these being on the dorsum of hand.

The vesicles are irregularly grouped, here and there being two or three in a line, with their borders in contact. They are circular, flattened, and dark, with depressed, brown-drying centres. The periphery of the majority of the vesicles was white and opalescent, surrounded by a dull red areola about three lines in width, but in some of the more recent ones the areola was pink. They are not painful, although there was some œdema in the neighbourhood of the vesicles. His temperature was normal. There was no constitutional disturbance or glandular complications either above the inner condyles or in the axilla.

The vesicles, with the exception of their large size and comparative absence of local inflammation, present the usual characters of vesicles resulting from vaccination.

No fresh symptoms occurred during his stay in the hospital, and at the end of the tenth day the eruption was subsiding, exactly like vaccinia of a similar age.

There can be little doubt that this case is one of infection from a horse suffering from the disease described by Jenner as the 'grease,' and which when transmitted to the cow developed further as cowpox. Although there was in the same house a child who had been vaccinated, this source of infection may be reasonably excluded, for his statement that he never came in contact with the child was most positive.

The appearance of the disease, moreover, is identical with that delineated by Jenner in his work on cowpox, as produced on a child's arm by inoculation from the hand of a man who had been infected from a mare which had sore heels.*

Horsepox, it is known, is not infrequently transmitted to man, producing in the main symptoms resembling those of vaccinia; and it appears, according to the 'Veterinary Journal,' that Professor McEachran has reported several instances of people being infected by this disease at Montreal, where it prevailed to a considerable extent among horses.

The drawing of the eruption was taken as it appeared on the seventh day of the disease.

XXVII.—*On a Case of Excision of a Lingual Epithelioma, by Dr. Petrequin's 'Thermo-Cautère.'* By Richard Barwell. *Read March* 3, 1877.

As experience in the use of a new instrument, especially of one ingenious in construction and simple in application, is always valuable, I beg to offer to the Clinical Society the following case. I must, however, premise that I have no claim to any part in the invention of the 'Thermo-Cautère.' I simply, on becoming acquainted with it, recognised its merits, and determined to use it in the first available case, which was that of Mrs. ——, who was sent to me by Dr. Spurrell, of Belvedere, on Nov. 29, 1876, with a tumour of the tongue. This tumour was on the right side, quite on the edge, opposite the second molar tooth. The projecting portion was rough and papillated, about the size of a cherry-stone; its colour at that time was brown, she having been recommended by a medical man in a distant county to rub it with nitrate of silver. The substance of the tongue was singularly free from induration or thickening. The colour of the organ round about the tumour partook of the silver staining. Although the surface-colouring and the absence of induration rendered the diagnosis less easy than usual, I nevertheless recognised the tumour as an epithelioma, and

* See case of John Baker, No. XVIII. An Enquiry into the Causes and Effects of the Variolæ Vaccinæ. Edward Jenner. 1801. P. 33.

recommended its immediate removal. The proposal was accepted; and in order to avoid the mental distress of such a prospect as much as possible I was requested to perform the operation on the following day.

On carefully examining the place and condition of the tumour it appeared to be unnecessary to remove the whole tongue, although for safety sake a tolerably large triangle or semi-oval round the growth would evidently have to come away. Such a piece could hardly be taken out with the wire of the galvano-cautery or écraseur save by a long and troublesome operation, in the course of which the lip would be almost inevitably burnt. I therefore determined to use the instrument which I will immediately show.

It consists of a blade half blunt throughout its whole extent, but much blunter near to the base than the tip. It is 1½ inches long, is made of platinum, and is hollow. It is fixed into a cylindrical, hollow metal holder 2 inches long, at the other end of which are two slots communicating with the central cavity. This cylinder terminates by a tubular screw, whereby it can be affixed to a handle of some non-conducting material, which is likewise hollow, and at the other end of which is a projection, whereon an india-rubber tube can be fixed. This tube communicates with a bottle containing benzoline, and further on is provided with the usual double ball arrangement for keeping up a continuous current.

Now, the object of these arrangements is this:—Firstly, the platinum tip is held in the flame of a spirit-lamp until it is slightly, ever so slightly, red-hot; then all external heat may be dispensed with. By pressing the india-rubber ball there is pumped into the hollow knife a stream of benzoline vapour which ignites and acts as an internal furnace, keeping the instrument up to any desired pitch of temperature, while the products of the combustion escape at the slots above mentioned.

In its use the bottle of benzoline may be hung by means of a metal catch in a buttonhole of the surgeon's coat, while the ball, being worked with the foot, leaves both hands free.

In the operation on this lady's tongue, on November 30, I was assisted by Dr. Spurrell and Mr. Conolly. I first passed an armed needle through the middle line of the tongue as far back as seemed necessary, and confided the management of the cord to Mr. Conolly, while Dr. Spurrell held the lips well apart with retractors, guarded by several folds of lint. The tongue having been drawn by the cord

out of the mouth and to the left, enabled me to seize its edge well beyond the tumour, in a pair of strong vulsellum forceps and draw this part further out of the mouth, both forward and to the right, so that while keeping up the heat of the instrument by action of the foot I could slowly, but quite as rapidly as I wished, cut with the hot knife a sufficiently large triangular piece out of the side of the tongue. I found no difficulty in keeping the instrument hot enough; I might, indeed, have kept it much hotter, but I prefer a slow action of the heat, as likely to obviate more effectually secondary or indeed primary hæmorrhage. In this operation the only blood that flowed was some infinitesimal amount that came from the needle-puncture. No part of the lips or cheek was burnt. I have sections of the tumour which show a distinctly epitheliomatous structure.

I saw this lady in the latter part of July 1877. There was no return of the disease, the scar being soft and flexible.

XXVIII.—*Case of Cancer supervening on Ichthyosis Linguæ of twelve years' standing. Removal of Diseased Portion. Rapid Recurrence. Excision of Tongue. Recovery.* By George Brown. *Read March* 23, 1877.

THE case which I have the honour to bring before the notice of the Society this evening is one which will doubtless have more than ordinary interest for its members, as it was here that the disease, of which this case affords a typical example, first received in this country that attention from the surgical profession which its rarity and grave nature demand.

The patient, R. W., æt. 55, is of full habit of body and sanguineous temperament. His general health has always been good. Is married and the father of three children, all healthy; the eldest is five years old, and the youngest ten months. There is no family history of cancer, but about ten years ago he was operated on for cancer of the lower lip. The scar is still visible. He states that he has never had syphilis. He first consulted me in April 1876, when he gave the following account of his illness:—For upwards of twelve years he had noticed that the surface of his tongue had a white, leathery appearance, which he attributed to excessive smoking, as he had for many years previously smoked from four to eight ounces of tobacco weekly. As it

gave him no trouble he attached but little importance to the condition of the tongue, but a few years ago he showed it to his family doctor in the country (at that time he resided in Gloucestershire), who said that he had never seen an affection of the kind before, and advised him to consult a surgeon in London. He failed to act on this advice, and thus nothing was done for him in the way of treatment up to the time I first saw him. About five months before I saw him he noticed a small lump far back on the dorsum of the tongue, and at the same time felt some stiffness about the jaws, and he suffered occasionally from very acute pain in the left ear and left side of the neck. The lump continued to grow larger, and the tongue became much swollen and very painful, so as to render mastication and deglutition difficult. In consequence he was obliged to live almost entirely on liquid food. His speech also became somewhat indistinct.

On examination I found that the whole of the dorsum of the tongue was covered with white ichthyotic patches, and that immediately to the left of the raphe and about an inch and three-quarters from the tip there was a hard lump the size of a hazel-nut, having down its centre a small fissure. Although strongly suspecting the disease was malignant, I decided to try the effect of medicines before resorting to operative measures. Accordingly I prescribed a mixture of arsenic and iodide of potassium, and requested the patient to see me again in a month. Circumstances, however, prevented him from seeing me for two months. By this time the lump had increased considerably, and the fissure had been converted into an ulcerated surface about three lines long and 1½ broad. There could no longer be any doubt as to the nature of the case, so I advised an operation. My old tutor and friend, Mr. Hird, now kindly saw the case with me, and recommended that an attempt should be made to save the tongue by removing the diseased portion only. This mode of procedure certainly seemed to offer a fair prospect of success, as there was fully an inch and a half of the tongue in front of the tumour which appeared to be perfectly free from cancerous growth. Accordingly, on July 17, I removed the diseased portion of the tongue with a scalpel, leaving the tip and sides intact. The wound extended so far through the thickness of the tongue as to expose the genio-hyo-glossi muscles. A good deal of hæmorrhage took place, which was checked by means of the actual cautery. At the same time I took the opportunity of well cauterizing the sides of the

wound, with a view to destroy any diseased tissue that might have escaped the knife. The patient made an excellent recovery. In three weeks he was able to resume business—that of an hotel-keeper—and in five weeks the wound had entirely healed. The piece removed measured two inches in length and one inch in width.

For a time the patient did well, but in about two months the disease recurred, bringing with it all the old symptoms. The patient has since told me that, having submitted to one operation, he made up his mind to say nothing about the return of the disease, fearing to run the risk of a second, which he knew would be a much more formidable one than the first. After his recovery I did not see him again until November 21. On examination I then found that there were two distinct cancerous nodules about the size of a horse-bean to be seen on the dorsum of the tongue, one three-quarters of an inch from the tip, and the other a little further back, and immediately to the right of the cicatrix resulting from the first operation. I strongly urged another operation to be performed without delay, especially as there were indications that the cervical glands were becoming affected, and, after considerable pressure put upon him by his friends, he consented. On the following Saturday (November 25) I removed the tongue by means of the wire écraseur. The operation was attended with considerable difficulty, in consequence of the disease extending so far back towards the root of the tongue. As it was impossible to get the curved needle behind the disease by passing it through the tongue from below upwards, as recommended in text-books, I adopted the following mode of procedure:—A gag having been fixed between the teeth, the tongue was seized with a pair of forceps and pulled out of the mouth as far as possible, and held by an assistant. I then passed a curved needle charged with stout thread through the organ from side to side. The thread having been secured in a loop, the tongue could be drawn still further out, so that I was able to pass two hare-lip pins through it from side to side still further back. Finally, I passed the wire of the écraseur around the tongue behind the pins, and removed it in the usual manner. By this means I was able to take away nearly the whole of the tongue as far back as the anterior pillar of the fauces, and it will be seen on looking at the preparation that some of the circumvallate papillæ are included in the excised portion. There was very little hæmorrhage during the operation, and that which followed

the removal of the tongue was readily arrested by the application of solution of perchloride of iron. The operation lasted fully half-an-hour, and the patient was kept well under chloroform during the whole of the time by my friend Mr. F. H. Hume. The patient passed a very quiet night, and next morning drank without much difficulty a good quantity of iced milk and water. There was very little subsequent hæmorrhage. The following night the parts became so swollen that he was unable to swallow for several hours. Small pieces of ice were constantly kept in the mouth, and cold-water compresses around the neck, and by the morning he was again able to take liquid nourishment. From this time he did uninterruptedly well, so that on the thirteenth day he was able to walk out, and within a month the cut surface in the floor of the mouth had entirely healed.

Shortly after the operation it became evident that two of the glands of the neck were enlarged, one in the right submaxillary region, and the other in front of the sterno-mastoid muscle on the left side. He has since taken 20 grains of iodide of potassium and 20 minims of arsenical solution daily, with, I believe, good effect, as the glands remain about stationary in size.

I may, perhaps, be permitted to say a few words on the physiological aspect of the case. The tongue is concerned in the functions of speech, taste, mastication, and deglutition, and we might expect that these would be seriously interfered with by the loss of the organ.

First as to speech. You will have an opportunity of observing, when the patient comes before you, that he can articulate almost any word sufficiently distinctly to be well understood. He transacts his business daily as before the operation, and only yesterday week he even addressed a public meeting for upwards of ten minutes.

As to taste. This is scarcely, if at all, impaired. He readily distinguishes the four simple tastes, sweet, sour, salt, and bitter, and he can even judge of the nature and qualities of wines and spirits almost as well as he could before the tongue became affected.

As to mastication and deglutition. It is in the performance of these functions that he really feels the loss of the organ. He can get on very well with liquid food, but finds much difficulty in masticating and swallowing solids.

This case goes to show that it is useless to temporise or adopt any half-measures with this disease. When ichthyosis

linguæ has developed into cancer the sooner it is removed the better, and there is danger of removing too little rather than too much of the tongue. At the first operation everything seemed to promise well for a successful result, as the disease was apparently circumscribed to a limited portion of the tongue, yet it so soon recurred that one almost regrets that the entire organ had not been excised at first.

It is unnecessary to enter upon the discussion of the pathology of the disease, as this has already been fully dealt with by abler observers than myself.

One word as to its causation. In this case there is not the slightest evidence pointing to syphilitic origin, while there is strong probability that the disease was primarily due to excessive smoking.*

I ought not to conclude this paper without acknowledging the great obligation I owe to Mr. Hird for giving me the benefit of his large experience on each occasion of operating, as, without the guidance and assistance of a surgeon of great professional attainments, I should have hesitated to undertake the responsibility attaching to a case of this description.

XXIX.—*Case of Recurrent Cancer of the Tongue Treated by Ligature of the Lingual Artery.* By Warrington Haward. *Read March* 23, 1877.

G. A., æt. 54, a butler, was admitted into St. George's Hospital, under my care, on Dec. 29, 1875. Nine months previously he had noticed a small irregular ulcer on the left side of the tongue, which he attributed to the presence of some decayed teeth. The carious teeth were removed, but the sore on the tongue steadily increased in size and painfulness, so that for the last month his sleep had been much disturbed, and he had been unable to take any solid food.

No cancerous, scrofulous, nor syphilitic taint could be discovered in his family. He had never suffered from syphilis; his wife and children were healthy.

On admission he was of pale complexion, was fairly nourished, and had an anxious and careworn expression.

* It is also probable that the primary cancer of the lip, which was excised ten years before the appearance of cancer of the tongue, was also due to excessive use of the pipe.

On the left side of the tongue, opposite the spaces from whence the first and second molar teeth had been removed, was an irregularly-shaped raised growth, the surface of which was excavated by ragged ulceration, and furnished a foul ichorous discharge. The tissues around the growth were indurated, the hardness fading off by degrees into the healthy structures. The epiglottis and also the floor of the mouth appeared natural. A lymphatic gland under the left side of the lower jaw could be felt slightly enlarged. He suffered much lancinating pain on the left side of the tongue, and his speech was painful and indistinct.

Dec. 30.—He was placed under the influence of ether, and I removed the greater part of the tongue with the écraseur, the wire being passed apparently well beyond the disease. The growth on examination presented the usual characters of epithelial cancer; the tissues cut through had a healthy appearance.

He went on very well after the operation for the first three weeks, at the end of which time the wound seemed very nearly healed; but at the end of a month a fresh growth made its appearance at the left side of the root of the tongue, and rapidly increased; also the glands below the jaw became enlarged and indurated.

Feb. 3.—The growth had attained the size of half a walnut. I therefore determined to tie the left lingual artery, in the hope of delaying the progress of the disease. A horizontal incision was made on a level with the hyoid line, and the artery looked for in the usual situation. It was impossible, however, to recognise the structures, owing to the enlargement of the lymphatic glands and general infiltration of the tissues. I therefore exposed the artery at its origin from the external carotid, and tied it about half an inch from that vessel with a catgut ligature. The wound was sponged out with carbolic acid solution and closed with sutures.

4.—Next day the growth and the left side of the root of the tongue were distinctly paler than the right side.

6.—The wound had united kindly; the surface of the new growth was sloughing.

9.—He was attacked with erysipelas of the left side of the face and neck, which subsequently spread over the whole of the head. This was attended with great depression, for which it was necessary to give him considerable quantities of stimulants.

The erysipelas gradually passed off, but was followed by

the formation of a deep abscess in the left side of the neck, which was opened February 20 by the knife and dressing forceps, and a drainage tube inserted.

March 6.—There was but little discharge from the cervical abscess; several sloughs had separated from the growth on the tongue, leaving a healthy granulating surface level with the other side of the root of the tongue.

10.—He had several rigors, and a rather severe diarrhœa, and a day or two afterwards an abscess formed in the lower part of the right leg, from whence an opening gave exit to some grumous pus mixed with blood.

He was given quinine and iron, with nourishing food and stimulants, but was evidently losing strength.

The cervical abscess healed, and the left side of the root of the tongue, which had previously been rendered prominent by the new growth, was now (March 20) evidently smaller than the right side, and, with the exception of a point the size of a pea, was healed. He had no pain in swallowing, and spoke intelligibly. The symptoms of blood-poisoning, however, continued; there were slight rigors, and another abscess formed in the leg, and on April 14 he was again attacked with erysipelas of the face and neck, which proved fatal on May 2. A fortnight before he died the tongue was quite healed. Unfortunately, no post-mortem could be obtained.

I have related this case simply as an example of the effect of ligature of the lingual artery upon a cancerous growth of the tongue. The recent growth had attained the size of half a walnut, and was rapidly increasing when the artery was tied. From that time a marked change took place; the tumour ceased to grow, immediately became pale, and in a few days was observed to be sloughing. Gradually separation of the growth went on, until the affected side of the root of the tongue became even smaller than the sound side, and eventually the part healed. It is important, however, to remember that the greater part of the tongue had been removed before the ligature of the artery, and thus the anastomosis between the arteries of the two sides would be greatly diminished.

How long the part would have remained healed the rapid death of the patient prevented our knowing, and I do not doubt that the pyæmia and erysipelas, which killed him, were the result of the operation, which was, therefore, a failure. Yet from this, as from many of our failures, there is, I think,

something to be learned, and the case certainly confirms the opinion of Demarquay, Moore, and others, that deligation of the lingual arteries may be usefully undertaken for the starving of cancerous growths of the tongue. I do not, of course, in the least suppose that the operation is curative, but I am glad to avail myself of any means whereby the suffering produced by this so painful disease may be mitigated; and the patient whose case I have described was exceedingly grateful for the relief given him by the operation.

With regard to the method of performing the operation, I would remark that when the artery is obscured by the diseased condition of the tissues wherein it lies, the simplest plan seems to me to seek it at its origin from the external carotid.

XXX.—*A Case of Subperiosteal Resection of the Shaft of the Tibia.* By Christopher Heath. *Read April* 13, 1877.

F. F., æt. 10, was kicked by a cow on the right knee, on April 4, 1876; the day following he walked lame, and the leg began to swell, and at length the boy was unable to use his leg at all. An incision was made over the middle of the leg, but, according to the boy's account, no pus was evacuated. As he became worse he was sent to University College Hospital, and admitted under the care of Mr. Heath, on May 10.

The right leg was considerably swollen, and the lower two-thirds of the tibia was felt to be thickened. Just below the middle of the leg, over the inner surface of the tibia, is a sinus in the middle of a cicatrix, leading down to bare rough bone, with free discharge of pus. There is a soft fluctuating swelling below this sinus. The knee is kept flexed at a right angle, but can be easily straightened. The patient is pale and anæmic; pulse 130; temp. 100°.

May 17.—Mr. Heath made an incision 4 inches long over the inner surface of the tibia; the necrosed bone was seen lying in a shell of new bone; the latter was separated with the handle of the scalpel and the shaft of the tibia removed, the cavity plugged with lint, and the limb placed on a McIntyre's splint.

The bone removed consisted of the whole diaphysis, which was completely separated from the epiphysis at each end. A shell of new bone about $\frac{1}{8}$ inch thick was adherent to the outer and posterior surface of the tibia. The inner surface of the shaft was seen to be necrosed in its whole length, with a distinct line of separation formed around it; this sequestrum is still firmly fixed to the rest of the diaphysis.

After the separation of the plug of lint the wound was dressed with Condy's fluid; in a week free suppuration was established. It was then noticed that the shell of new bone was broken through behind, and that the ends were tilted forwards, and projected in the wound, brown and dry. On June 2 these necrosed fragments were removed, and after that the wound progressed more favourably, and the temperature, which hitherto had been raised to 100°—102°, fell to 99°; a large quantity of new bone was thrown out around the wound. June 17 an incision was made into an abscess which had formed below the wound, and a large quantity of pus evacuated. Ten days later, when the wounds had left merely two sinuses, two short drainage tubes were introduced. On July 3 a fresh opening appeared on the inner side of leg, and a probe passed through it under the callus for about $1\frac{1}{2}$ in. On July 25 this last sinus was still open, and a short sinus was left at the upper end of the wound; firm new bone was felt for the whole length of the tibia. The patient's general condition was considerably improved; he had gained strength, and was less anæmic. On August 3 the Cline's splint, which had been substituted for the McIntyre for the last fortnight, was discontinued, and the leg was simply bandaged. On August 11 the temperature suddenly rose to 105·2°; pulse 160; and the next day there was a distinct erysipelatous blush all round the wound.

The attack lasted until the 15th, when he rapidly convalesced. On September 1 a piece of bone the size of a grain of corn came away; the next day he went to Eastbourne. On his return he was seen at the hospital, and Mr. Heath found that the limb had gained greatly in symmetry and strength, but there was still a discharging sinus.

The patient was brought before the Society, and could walk without support. The wound was still open and discharging slightly, and a few fragments of necrosed bone have come away from time to time.

The measurements of the limb show that it is only $\frac{1}{4}$ inch

less than the sound one in length, and is nearly 2 inches larger in circumference than the opposite one.

The foregoing case is a good example of subperiosteal resection as distinguished from the ordinary removal of sequestra. The acute inflammation which leads to suppurative periostitis is essentially a disease of early life, when the union between the diaphysis and the epiphysis is incomplete, and hence the proceeding is possible in children, though the cases requiring it are rare. It is remarkable that although separation from the epiphysis had taken place the whole of the shaft was not dead, and had new bone adhering to it at one or two points. In this it appears to resemble the specimen figured by Mr. Holmes, in his 'Surgical Diseases of Children,' and I notice that he refers to some criticisms of his case by M. Verneuil, who 'doubts whether any operation was necessary, inasmuch as he says the bone could not have been necrosed, since M. Chassaignac has demonstrated that bones do not become necrosed unless they are attacked by osteo-myelitis as well as subperiosteal abscess.' Mr. Holmes goes on to say: 'I can only reply that this bone *was* necrosed, as its separation from the epiphysis sufficiently shows.' In the foregoing case, however, I am quite ready to admit that the back of the shaft was not actually dead at the time it was removed, although it was separated from the epiphysis; but I maintain that the treatment was nevertheless correct, and the best for the patient, who was suffering considerably from the irritation caused by the rubbing of the parts and the profuse discharge of pus. Whether every portion of the shaft would have eventually died I cannot tell, but it appears probable that it would have done so, and I am quite sure that valuable time and much suffering were saved by an early interference.

Warned by Mr. Holmes's case, I was careful to keep the limb in a splint from the first, and thus obviated the shortening which is otherwise apt to occur from the action of the muscles. The use of Esmarch's apparatus renders operations of this character practically bloodless, to the advantage of both the surgeon and the patient.

XXXI.—*A Case in which the lower half of the Ulna was Excised for Myeloid Tumour. Recovery with an useful Limb.* By R. Clement Lucas. *Read April* 13, 1877.

THE case which I have brought before the Society is of interest, partly on account of the great rarity of the occurrence of myeloid disease in the lower end of the ulna, but chiefly on account of the very serviceable limb which remains, after excision of the tumour with the lower half of the bone in which it grew.

Myeloid tumours no doubt have before this been met with in the lower end of the ulna, but as yet I have been unable to find any record of a similar case, although I have searched in the 'Transactions' of the various Societies, and have visited several of the pathological museums of the metropolis.

Nor have I been able to find an account of a case in which the ulna alone has been excised for other disease than necrosis, so that the operation to be described, if not unique, can certainly not have been performed many times.

In the Guy's Hospital Reports for 1861 Mr. Cock, in some practical observations on injuries to the forearm and hand, mentions three cases in which the lower ends of both radius and ulna were removed for compound fracture, and in every case a useful hand remained.

Erichsen refers to three cases and Mr. Cock to one in which the greater part of the ulna was excised, but each of these operations appears to have been undertaken for injury or necrosis, so that the periosteum was preserved and the bone reproduced.

I have to thank Dr. Goodhart for reference to a preparation in the Museum of the Royal College of Surgeons contributed by Mr. Hancock. The carpal ends of both radius and ulna were in this case removed on account of a tumour commencing in the radius of a woman, æt. 25. The preparation is styled osteo-aneurism, but Dr. Goodhart tells me the microscopical features are not given fully enough to allow of decision as to its nature. A useful hand was thus preserved, but it required a mechanical support. Mr. Henry Morris has performed a similar operation, which was noticed in the 'Lancet,' March 18, 1876.

Case reported by Mr. T. Alexander.

C. S., a married woman, æt. 29, was admitted into Guy's Hospital, under the care of Mr. R. Clement Lucas, August 11, 1876. She was rather stout, and in general appearance healthy. She had been married seven years, and had had two miscarriages, but had given birth to no living children.

About nine or ten months before admission, she first noticed a slight swelling at the lower third of the left ulna. This swelling was accompanied by a gnawing pain, and it gradually, but very slowly, increased in size. In April 1876 she first sought advice at another metropolitan hospital, where she attended as an out-patient for ten weeks. The swelling was here painted with iodine, and after some time an incision was made into it, but only blood escaped. She was then admitted into the same hospital, but left a fortnight later, upon the suggestion having been made to her that amputation would be necessary. She was afterwards brought to see Mr. Lucas by a friend, who knew something of her family.

When admitted into Guy's Hospital, in August, the patient was found to have a firm, dense, but somewhat elastic swelling occupying the lower part of the left forearm on the ulnar side. It projected more posteriorly than anteriorly, and extended upwards for about two inches and a half above the wrist-joint. It was smooth and convex towards the inner side, where the surface was slightly red and inflamed, but the skin was not adherent to the tumour except over a small cicatrix. The circumference of the forearm across the centre of the tumour was two inches greater than the corresponding part of the opposite limb on the same level. The styloid process of the ulna could be distinctly felt. The movements of the wrist-joint were perfectly free, and pronation and supination only slightly interfered with. The tumour was not particularly painful upon pressure. The glands above the tumour were not enlarged. The tumour having gradually increased in size, in spite of mercurial applications and the internal administration of iodide of potassium, an attempt to excise the growth was determined upon. On August 15, chloroform having been administered, Mr. Lucas made a longitudinal incision about four inches in length on the inner side of the forearm, so as to expose the tumour between the flexor and extensor carpi ulnaris muscles. In doing so, the posterior branch of the ulnar nerve

was exposed and divided. The muscles and skin were now retracted to the sides and the bone exposed above the level of the tumour. In order to clear the bone above the tumour, it became necessary to make a short transverse incision at the upper part of the wound. A blunt knife was then passed between the radius and ulna, and the latter bone was divided with a saw. The piece of bone connected with the tumour was now seized and drawn out of the wound, whilst the interosseous membrane connecting it to the radius was divided, and the extensor indicis on the posterior aspect and the pronator quadratus on the anterior were separated from the periosteum enclosing the tumour. On dividing the ligaments of the lower radio-ulnar joint the tumour dropped away from the triangular fibro-cartilage; and on dividing the attachment of this cartilage to the styloid process, and also the internal lateral ligament of the wrist-joint, the excision was completed. The wrist-joint was thus left intact, being protected by the triangular fibro-cartilage. She was very sick after the operation and on the following day, when her temperature rose to 100·8°, and her pulse to 96.

The upper part of the wound was closed with sutures, but the lower part was filled with lint soaked in carbolic lotion. The operation was not performed antiseptically, but carbolic dressings were afterwards employed. The temperature for the first fortnight varied from 99° to 100°, and the pulse ranged from 80 to 90. The case went on uninterruptedly well, the upper part of the wound uniting and the lower part closing by granulation. She left the hospital five weeks after the operation.

She has now free use of her hand, which she employs in all her household work; and the movements of pronation and supination are perfect. There is, moreover, no tendency of the hand to drop towards the ulnar side, such as perhaps might have been anticipated after removal of the inner bone with which the carpus articulates. In this respect excision of the ulna contrasts favourably with excision of the radius, inasmuch as abduction of the hand almost certainly follows resection of the latter bone. This abduction is often seen after Colles's fracture, and in its most complete form in cases of congenital absence of the radius, when the hand often assumes a position at right angles to the forearm. Further, the movements of pronation and supination must necessarily be lost when the radius is divided, whereas after excision of the greater part of the ulna they may remain complete.

Lastly, owing to the intervention of the triangular fibro-cartilage, excision of the lower end of the ulna may be effected without opening the wrist-joint.

In thus comparing excision of the lower extremity of the ulna with excision of the lower end of the radius, I would not deter any from performing the latter operation; on the contrary, I would myself be the first to follow the example of Mr. Hancock and Mr. Morris, and remove parts of both bones rather than sacrifice the hand; but what I wish to point out is that removal of the lower part of the ulna is a most simple operation, involving injury to no structure of importance, and yielding a most satisfactory result. Happily, tumours of the lower end of the ulna are not of very frequent occurrence; but after the experience of this case I should hold it most culpable in myself, and not altogether blameless in others, to entertain the thought of amputation for a benign or doubtful tumour, without first attempting to remove the growth by excision of the bone.

Microscopic examination left no doubt as to the nature of the tumour, which was composed, for the most part, of giant-cells characteristic of myeloid disease. It is interesting to note that sensation has returned in the dorsal aspect of the little finger, although as much as two inches of the posterior branch of the ulnar nerve were removed. The return of sensation cannot, therefore, be attributed to a reunion of the nerve, but must be due to the anastomosis of its distal filaments with other nerves.

XXXII.—*A Case of Myeloid or Endosteal Sarcoma of the Left Radius, in which the lower ends of the Radius and Ulna were Excised, leaving an useful Hand.*

By Henry Morris. *Read April* 13, 1877.

On January 3, 1876, Maria M., æt. 28, living in Camden Town, applied to me, at the cancer out-patient department of the Middlesex Hospital, for advice respecting a large tumour just above the left wrist.

She stated that she was married and the mother of five children, the youngest of which was only three months old; and that she had had two miscarriages.

For two years she had suffered from internal hæmor-

rhoids, which very often protruded and gave rise to much pain, but in spite of this she considered she had enjoyed good health. She was in extreme poverty and much family distress, and was very delicate-looking, being thin and spare in figure, and pinched and anæmic in face.

Of the tumour she gave the following history:—'Twelve months ago last Christmas, *i.e.* December 1874, I slipped down in the street during the frost and fell with my whole weight upon my left hand. I was at once seen by a parish doctor, who examined me. I was able to go to work the next day.

'My wrist pained me from time to time, with a gnawing kind of pain, which I felt more especially when I moved the hand quickly, as in wringing out clothes at the washtub; but for two months or more I went on with my work and did nothing to my arm, except that I used to wear a bandage, and apply cold water to it sometimes.

'About three months after the fall I found a swelling on the back of the outer bone of my arm, near the wrist, and I was soon compelled to give up work on account of pain. The swelling went on getting bigger and bigger for seven or eight months, when it at last reached round to the front of the bone. Since my confinement, three months ago, the tumour has been growing more rapidly than before. I have been losing flesh and feeling weak of late. The pain has never been very great since I gave up using my hand.'

When she first came to the hospital, thirteen months after the fall, and ten months after the commencement of the swelling, the lower end of the left radius was expanded into a large rounded tumour. The inner surface of the ulna was quite free, and could be traced down to the styloid process, but the radial border was overlapped by the expanded radius on both the flexor and extensor aspects.

On January 28 the left forearm, just above the wrist, measured $8\frac{7}{8}$ inches in circumference, while the right was $5\frac{5}{8}$ inches at the corresponding point; this difference was, of course, due to the tumour, which therefore measured $3\frac{1}{4}$ inches in circumference. The length of the growth along the dorsal aspect was 4 inches, on the palmar $3\frac{1}{2}$ inches; this difference was due to the greater prominence of the tumour on the one side than on the other, rather than to the greater length of bone involved. The consistence of the swelling varied much; in some places it was quite elastic, not to say soft, at others quite hard. Over the greater part

of the dorsal surface, especially, it felt hard and osseous. Large veins were meandering visibly over both surfaces, but were specially distinct on the flexor side. The radial artery was lifted up by the tumour, and could be plainly traced over it; the tendons moved superficially in flexing and extending the fingers.

The movements of the fingers and of the thumb were good, but those of the hand at the radio-carpal joint, especially extension, were much impaired. Pronation and supination were almost impossible. The forearm above the limits of the tumour, the arm, and the glands in the axilla were unaffected.

I proposed to the patient that she should come into the hospital, but this she flatly refused, and added that nothing would induce her to have her hand amputated. Some stramonium ointment and a mixture of quinine and iron had been ordered on the first occasion, and with these she was therefore directed to continue.

On February 11 the circumference of the tumour had increased ¼ of an inch; it had increased chiefly on the ulnar side, so as to overlap that bone still more on both its aspects. The superficial veins were more prominent, and there was some redness as well as considerable heat of the skin over the tumour. She was suffering more pain. The chief part of the dorsal surface of the tumour remained hard, and was somewhat irregular, but just above the carpal border of the radius, in a line with the index-finger, was a soft elastic spot, into which the tip of one's finger could be pressed. She still declared she would rather die than lose her hand; whereupon I proposed to remove the tumour without amputating. To this she thought she would consent, provided she could have the operation done at home; otherwise she would allow of none but medicinal treatment. In consequence another three weeks elapsed, during which the tumour was growing, the pain increasing in severity, and the movements of the hand and fingers becoming more and more impaired. At last she was admitted on March 2.

As the nature of the growth was not at all doubtful, and as it was quite clear that most of the soft structures were stretched over and not implicated by it, I decided to attempt its removal by excising parts of the radius and ulna. Before doing so, however, I tried, though without success, to obtain permission to amputate through the forearm, if I found it impossible to accomplish the end I had in view.

Operation.—On March 8, chloroform having been administered, and Esmarch's bandage applied to the hand and forearm, a long incision was made over the outer side of the radius, extending from the styloid process to the upper third of the bone. The radial nerve was looked for and used as a guide to the interval between the supinator longus and extensor carpi radialis longior muscles, as I had previously satisfied myself in the dissecting-room that I could most readily separate the soft structures from the front and back of the radius by going between those muscles and keeping the supinator to the fore part of the incision.

The supinator longus and the pronator radii teres at their insertions were detached from the radius, and the bone, when freed, both in front and behind, of its muscles, was sawn through at the lower edge of the supinator brevis by a chain-saw. The saw was passed through the interosseous membrane upon a piece of silk threaded through a nævus needle.

A second longitudinal incision, of less extent than the first, was made along the inner side of the ulna from the wrist-joint upwards, and through it the rest of the soft structures were separated from the tumour and from the lower part of the ulna.

The ulna was divided by the chain-saw between 3 and 4 inches above the wrist, and the lower ends of both bones of the forearm were disarticulated by opening the wrist-joint on the inner side.

This done, the entire tumour, together with the ulna and the pronator quadratus muscle, which was thinly and tightly spread out over the tumour, were removed *en masse.*

In the operation the anterior interosseous artery was necessarily divided above the upper border of the pronator quadratus, but, with this exception, none of the trunk vessels or their larger branches were injured. On removing Esmarch's bandage several bleeding points had to be tied or twisted, the most noticeable being a small branch from the radial, winding round the back of the radius, which had been divided close to its origin, and bled as furiously as could the radial itself. All hæmorrhage was, however, soon stopped; the wound was washed out with carbolic lotion, carbolised catgut sutures were inserted, and lint soaked in carbolic oil was placed over the incisions. The hand and forearm were enveloped in antiseptic gauze, and lightly bandaged upon a straight splint.

Description of the Tumour.—When examined after removal the tumour proved to be of a typical myeloid character. It was confined within the radius, which formed a thin and imperfect shell, on the dorsal surface of which were seen the grooves and markings of the extensor tendons. Here and there the bone had been quite absorbed, and the outline of the shell was completed by periosteum alone. This explained the resiliency of the tumour at some spots, and was the cause of the shell giving way in one place during the manipulations of removal. The articular surface of the radius was quite intact, although the disease had encroached so far in this direction as to leave only a very thin layer of bone beneath the articular cartilage. The ulna was firmly attached to the tumour, partly by the pronator quadratus, and partly by adhesions between the periosteum of the ulna and the capsule of the tumour.

Within, the growth was composed of a brownish-red, grumous-looking, soft material, which exhibited under the microscope *myeloplaxes* in large quantity. Had this soft matter been removed and the firmer portions of the tumour allowed to dry much the same appearance would have been presented as is seen in those specimens which used formerly to be called *spina ventosa.*

It was quite clear that the pressure and rapidity of the growth had destroyed the surrounding bone faster than the expanding periosteum could form new; and thus such a loss of osseous tissue had taken place that it is probable spontaneous fracture of the radius would have occurred in a short time, had the disease been allowed to take its course.

Progress of the Patient.—The patient did uninterruptedly well, except for obstinate constipation, which aggravated the hæmorrhoids; and for much swelling and tenderness of the breasts, consequent upon weaning her baby, which she did after her admission into the hospital. The temperature on the first two days after the operation reached a little over 100°, otherwise it remained normal throughout. The wounds at once commenced to heal, and there was but little suppuration. On March 17 all the sutures were removed, and on March 23 she sat up, and was able to move the middle and ring fingers a little. On April 3 there was some gaping of the upper and lower ends of the wound on the radial side, and four ligatures (which had been cut off short at the time of the operation) had worked their way up to the surface.

Another ligature, not yet loosened, together with what looked like a portion of a tendon sloughing, were seen in the wound. On April 7 the slough came away; it was not a large one. The last ligature had separated two days previously. The patient was about the ward with her arm in a sling. On April 27 she left the hospital. The wound on the ulnar side was quite sound, and that on the radial was almost cicatrised. The hand and fingers were somewhat œdematous, and the hand, when unsupported, hung helplessly, and could not be raised by the muscles of the forearm. In the interval between the carpus and lower ends of the bones of the forearm there was considerable thickening and induration. The hand and forearm continued to be supported on a flat splint in such a way that flexion and extension at the elbow and at the metacarpo-phalangeal joints could be performed.

After leaving the hospital the patient, who was very apathetic and indifferent about her condition, rarely attended without being sent for. At the end of August she came, and had a light leathern splint moulded to the forearm and carpal part of hand. When out of the splint her hand still hung down loosely like a flail, but she was now able to raise it to a level with the back of the forearm, and to keep it so for a little while. She could make the thumb approach the tip of each finger, but could only make it touch that of the index-finger. The hand was somewhat retracted, so that the carpus had approached the distal ends of the radius and ulna, the ulna now being only 1 inch and the radius about 3 inches from the carpus. The hand inclined towards the radial border of the forearm when the arm was resting on a table, as well as when she made an effort to move the hand from its dangling attitude. It could, however, be brought straight and kept so on a flat surface. Both radial and ulnar arteries pulsated naturally. Sensation of the whole hand, as tested by the point of a pencil, was good. On applying the Faradaic current it was found that it excited a slight movement, and provoked a low cry from the patient, each time the circuit was completed, by applying one pole on the forearm near the elbow and the other at some part of one of the fingers or of the thumb. The most marked effect was produced when the positive sponge was placed upon the ring-finger.

She says she is very thankful she did not have her hand removed, as she finds it very useful. She has been working hard of late, and nursing her sick children.

On January 11, 1877, she was seen for the last time. She was still wearing the same splint, and with it on could move her thumb and each of her fingers fairly well; she was able to pick up a pin, and could hold a fork. She had been using the hand a good deal for washing, holding the wet linen in the left while she wrung it dry with the right hand. She had been living very badly, and was daily expecting to be confined.

I have endeavoured to bring her before the Society; but she has changed her abode since her confinement, and I am not able to trace her.

Remarks.—In performing this operation I was following, unconsciously, the course once previously adopted by Mr. Hancock, in a somewhat similar case, about seven years ago. This case is referred to by Sir Wm. Fergusson, who assisted at the operation, 'as a most remarkable example of disease and conservative treatment;' and, he adds, 'with great and good judgment, in my opinion, Mr. Hancock resolved to attempt excision of the tumour with a view of saving the hand.'

The patient was a young lady who had been distressed for years with a gradually increasing growth in the forearm. It was confined to the radius, but a portion of the ulna was also removed. Subsequently she wrote a letter to Mr. Hancock, with the hand thus preserved, thanking him for the happy result of his treatment.

The following is a reply from Mr. Hancock to some inquiries I addressed to him:—

'Standen Chute, Andover, *March* 16, 1877.

'Dear Sir,—I brought the case before the Medical Society of London. It was one of osteo-aneurism, and I think it came out in the "Lancet" about the time you mention.

'About two-thirds of the radius and less of the ulna were removed at the time, and the hand was afterwards supported by a back and front splint, with a hand-piece, which was made by Mrs. Ernst, 80 Charlotte Street, Fitzroy Square, who took great interest in the case.

'I am sorry to say that the disease returned three years ago, necessitating amputation, and the patient died of pyæmia.

'Truly yours,

'H. Hancock.

'H. Morris, Esq.'

I have not been able to find any record of the steps of the operation; but Mr. Hancock's letter, together with Sir Wm. Fergusson's description and illustration, makes the case pretty complete.

Sir Wm. Fergusson had himself removed a tumour of the ulna about the size of a small lemon, which involved about 2 inches of the lower end of that bone. The nature of the tumour is not mentioned. The patient recovered quickly with perfect use of his hand.

It is perfectly well known that very large portions, amounting to nearly the whole of the radius or of the ulna, have often been removed for necrosis with the most satisfactory results. In the 'Medical Times and Gazette' for January, 1852, cases of this sort were selected as illustrative of that style which the eminent author designated 'Conservative Surgery.' Since that date the same treatment has been freely applied to the humerus, and proved still more 'conservative' of the upper limb. In a large number of cases great portions of the humerus have been removed for gunshot wounds, necrosis, and compound comminuted fractures; and in 1863 Dr. H. N. Bennett, of Bridgeport, Connecticut, reported in the 'American Journal of Medical Sciences' a case of resection of the head and upper third of the humerus for an enchondromatous tumour of the upper part of the shaft. The man recovered quickly with a very useful limb. Commenting on his case, Dr. Bennett says, 'As far as I can learn, my case is the first in this country, and the records of European surgery furnish only five examples of analogous character.' Three of these were unsuccessful in their results, as the disease was in each instance malignant. One was a simple exostosis, and the 5th (a case under Mr. Syme) was a non-malignant bony tumour involving the head of the humerus. Both these latter were successful.

The report of Dr. Bennett's case caused Sir W. Fergusson to write, in referring to a patient whose arm he had previously amputated at the shoulder-joint, 'I have felt remorse at having sacrificed such a hand and arm as are here represented;' and when, in 1865, another case in which a firm tumour, apparently non-malignant, and involving the whole thickness of the humerus about 3 inches above the elbow-joint, came under his care, he removed the growth by dividing the bone above and below it. The wound healed

kindly, and, although the arm dangled helplessly without a splint, the movements of the hand were almost perfect.

On a second occasion Mr. Syme removed the head of the humerus for a small growth, with a successful result.

These cases are, I think, encouraging, and furnish good grounds for preferring resection to amputation for benign tumours of the bones of the upper extremity. And even with malignant tumours of these bones, especially of their upper ends, it may be a question whether the treatment is not to be preferred. I believe it to be the fact that recurrence takes place invariably at some spot nearer to the centre of circulation than the original; and therefore, under the circumstances supposed, the disease would be as likely to recur after amputation as after excision.

XXXIII.—*Case of Acute Idiopathic Tetanus treated successfully with large doses of Bromide of Potassium.*

By Reginald Southey, M.D. *Read April* 27, 1877.

JOHN D., æt. 10, was admitted under my care at St. Bartholomew's Hospital on October 18, 1876, with all the ordinary symptoms of tetanus, which had lasted for eight days. He was a fairly-nourished child, with dark hair and eyes, well formed.

Condition on admission.—The boy was lying on his back, quite unable to turn himself, in a state of well-marked opisthotonos, the muscles of the neck, back, and abdomen being hard and rigid; skin perspiring slightly, red miliary rash over chest and abdomen. The abdominal recti stood out in especially prominent relief. I heard that the spasms in which I saw him were not continuous, but occurred at short and frequent intervals.

In point of fact, he was seized at intervals of about every three minutes with attacks of general tonic convulsion in the following order:—

First there was a spasm of the masseters and depressors of the corners of the mouth, then the back was bowed and the head thrown back, and the recti abdominales became as hard as a board. The limbs, both arms and legs, were rigidly extended, the fingers being sometimes clenched and at others extended.

Usually when the spasm began he uttered a short gasping cry, and during it sobbed or groaned.

Each fit lasted from 15 to 30 seconds, but during the intervals between the spasms, although the muscles of the trunk became less rigid, the face maintained a set fixed expression, from the persistent rigidity of the elevator muscles of the jaw, and the neck muscles always felt hard.

He was quite sensible, but evidently in constant pain, and the effort to answer questions troubled him. He could only open his mouth a very little, and the effort to do so, as indeed any effort that he made, or anything touching him, or any noise, or exposure of his body to cold, brought on an opisthotonic spasm instantly.

He could not swallow solids, but drank fluids pretty well.

Heart and lung sounds were normal. Abdomen flat. The bowels had not acted for four days. There had been no sickness. Urine was passed in fair quantity. Sp. gr. 1033, containing no albumen or sugar, but precipitating an abundance of phosphates with heat.

From his mother's account there appears to have been some delirium during the night preceding his removal to the hospital.

History of present illness.—Obtained from parents.

On October 8, while he was washing out some backyard with his shoes and stockings off, he was much frightened, and completely drenched by the sudden upsetting of a water-butt. He was neither hit nor hurt by the accident, and there was no account of any previous injury or bite. Moreover, a careful examination of his body failed to discover any bruise or prick, or sign of a splinter in his feet, or anywhere else in his body.

For the first two days after the wetting above-mentioned he was poorly, and considered to have caught a feverish cold. On October 10 he first complained of pain in his belly, and his neck became stiff and painful.

Two days later this stiffness was much more marked, and he began to have difficulty in opening his mouth; and from this date, the 12th, to the date of his admission on the 18th, all his symptoms steadily exacerbated, the stiffness extended to the muscles of the back, and the spasmodic attacks supervened, which invaded the muscles of his limbs.

He was stated not to have slept at all for eight days; he might have dosed a little.

Temp. 100°; pulse 96; resp. 22.

Treatment.—The patient was placed in a ward by himself, and kept as absolutely quiet as was possible. He was nourished by milk and eggs; strong beef tea was given at frequent intervals in small quantities; he was ordered 10 grains of chloral hydrate and 20 grains of potassium bromide every two hours, or until drowsiness was produced.

The notes taken of the case for the following twenty-four hours are minute, but perhaps not uninteresting to place on record. They were taken by my late house physician, Mr. Pye, whom I have also to thank for the very careful observations appended upon the amount of urea excreted per diem by this patient, and which makes his case a very complete one.

Oct. 19, ninth day of illness.—Temp. 100°; pulse 98; resp. 24.

9.30 A.M.—Skin perspiring freely. Slept a little after two doses of medicine had been taken. Took a third dose at 4 A.M., and slept well until 7 A.M. Since 3 A.M. the attacks of spasm have steadily diminished in violence and frequency —they always awake him.

From 8 to 9 A.M. five distinct attacks occurred, but they were slighter than during the earlier part of the night, and accompanied by less pain.

The permanent rigidity between the seizures is unaltered.

At 11 A.M. he took the sixth dose of the physic, making in all 1 drachm of chloral and 2 of bromide.

2 P.M.—I saw him, and ordered a tepid bath at 98°. He was kept in it fifteen minutes. The chloral was to be discontinued, but the bromide to be taken in drachm doses every three hours.

4 P.M.—General rigidity much lessened by bath. Feels much relieved by it, as also by gentle shampooing of the limbs when the tetanic attacks come on. Temp. 100°; pulse 90; resp. 20. Between 4 P.M. and 6 P.M. he had no fits.

Between 6 P.M. and 9 P.M. four attacks. The permanent rigidity increased meanwhile.

Between 9 P.M. and 11 P.M. more restless, having attacks every two or three minutes. Temp. 101°; pulse 100; resp. 30.

Ten grains of chloral were now added to each dose of his medicine, and he was again immersed for twenty minutes in a tepid bath (98°).

October 20, tenth day of illness.

8 A.M.—Was much relieved by the bath, during which his bowels acted, motion consisting of small hard black scybala in fair quantity; slept a good deal afterwards. Since 6 o'clock there was considerable noise from a violent patient in the adjoining casualty ward, which excited him so that the attacks have returned at intervals of every five minutes or thereabouts.

10 A.M.—The bath was repeated, but appeared only to distress him, and was followed by no relief. Temp. 101·2°; pulse 104; resp. 32. Ordered to take 1 drachm of bromide every hour and a half, except when asleep. His condition now steadily improved, the attacks recurring only at half-hour intervals.

Oct. 21, eleventh day of illness.—Temp. 101°; pulse 104; resp. 22. Has continued to take the bromide, without intermission, at the periods stated; has taken, therefore, during the last twenty-four hours, 2 ounces of bromide of potassium.

The evening note records that he has had fewer attacks, that there is less rigidity intervening between the attacks, and that he is able to open his mouth better.

Oct. 22, twelfth day.—Temp. 100°; pulse 100; resp. 24. Spasms less frequent, but more violent.

Oct. 23, thirteenth day.—Temp. 98·4°; pulse 100; resp. 22. Continued and maintained improvement; the bowels have acted freely, spontaneously, and there is marked decrease in the stiffness of the neck. The dose of the bromide, therefore, which for the last four days had been at the rate of 2 ounces per twenty-four hours, was decreased to 20 grains every three hours.

Oct. 24, fourteenth day.—Temp. 98·8; pulse 96; resp. 22. Attacks slight, and at rare intervals; much less stiffness; has become very drowsy. Medicine discontinued.

Oct. 25, fifteenth day.—Temp. 98·6°; pulse 100; resp. 24. Condition less satisfactory; attacks have returned, now average about one each hour, and are again severe, complains bitterly of the pain they produce; permanent rigidity of limbs increased.

On Oct. 26, 27, and 28, his condition gradually becoming worse day by day, and the legs and neck having become permanently stiff again, the temp. being 98·4°, pulse 112, resp. 20, I again had resort to the large and frequently repeated doses of bromide, ʒiss drachm every hour and a half.

Oct. 28, eighteenth day, P.M.—After 3 doses of bromide, his countenance became less pinched and he was able to open

his mouth, and the medicine was given less frequently, every three hours.

Oct. 29, nineteenth day of illness.—Improvement marked; able to munch a biscuit; is exceedingly sleepy, but wakes up to ask for food frequently.

Ward, Casualty. Name, John D—— Disease, Tetanus (idiopathic).

Date.	Quantity of urine in twenty-four hours.	Reaction and Colour.	Specific Gravity.	Albumen.	Other abnormal constituents, *e.g.* sugar, pus, &c.	Deposit.	Percentage of Urea.	Total quantities of Urea in twenty-four hours.	Circumstances bearing on urine excretion, *e.g.*, weather, character of skin, use of baths, frequency of micturition, &c. Drugs.
	cc.							grammes*	
14th day—Oct. 24	1050	Generally pale and clear.	1023	Absent throughout.	Urates occasionally present in excess. As a rule no deposit at all.	None.	1·4	14·9	
15th „ 25	820		1017				1·4	11·5	
16th „ 26	1400		1012				0·9	12·6	
17th „ 27	1120		1015				1·1	12·32	
18th „ 28	1720		1015				0·85	14·62	
19th „ 29	1300		1018				0·8	10·4	
20th „ 30	1100		1017				1·15	12·65	
21st „ 31	1600		1015				1·0	16·0	
22nd „ Nov. 1	1120		1020				1·15	12·88	
23rd „ 2	950		1018				1·15	10·92	
24th „ 3	920		1022				1·2	11·4	
25th „ 4			1030				2·5		
26th „ 5	mostly passed in bed.						2·2		
27th „ 6			1026				2·5		
28th „ 7	530	High coloured.	1020				2·0	10·66	
29th „ 8	1000		1015				1·4	14·00	
30th „ 9	1000		1018				1·15	11·5	
31st „ 10	900		1020				2·0	18·0	

* = 205·38 grains.

On Nov. 5, the twenty-fifth day of his illness, he had only one spasmodic attack in twenty-four hours, and there was hardly any permanent rigidity left; he continued taking 3i½ drachm of bromide every three hours, or 1½ ounces in the

twenty-four hours, for eight days, between Oct. 28 and Nov. 6, but on this date it was discontinued.

The patient's condition of emaciation and extreme prostration was quite remarkable; his skin was dry, harsh, and furfuraceous; he lay down in his bed, passing all his evacuations under him, but attention, nursing, and good feeding was all that was further needed; he slept, and continued sleeping, nearly all the twenty-four hours round, between Nov. 5 and 13—*i.e.*, from the twenty-sixth day of his illness to the thirty-fourth, but from this date he convalesced steadily and rapidly.

Remarks.—It remains only for me to notice how gradual the final recovery of this patient was; the tetanic attacks becoming first less frequent, but more severe, then less severe as well as less frequent, the stiffness, or permanent rigidity, declining gradually and last of all.

This is the second case of acute idiopathic or rheumatoid tetanus which has been carefully observed by me and treated to a successful issue with large doses of bromide of potassium.

When the medicine was withheld for four days, between the fourteenth and eighteenth of his illness, the tetanic symptoms all relapsed; immediately upon its recommencement they at once all declined again.

Although I am too old a practitioner to infer from the evidence of my own two pieces of experience that bromide of potassium exercises controlling power over tetanic spasms, I feel bound to add this case to already published ones, and to state that I am strongly impressed myself by the apparent benefit derived from the administration of this remedy.

Neither in this nor in the former case which I communicated to the Society could the symptoms be held to indicate mild forms of the disease: they were as severe attacks of tetanus as I have ever seen, and I have seen several.

Neither can I allow that the treatment was had resort to when the disease itself was manifesting spontaneous abatement.

We are bound to be just as well as sceptical, and to record a fact which tells not a little in favour of this remedy (if it be a remedy), that when it was withheld the symptoms steadily exacerbated, and when re-administered, as surely declined again.

Let the case be added to those recorded in Wood's Phar-

macopœia which tell in favour of bromide of potassium when given in sufficiently large doses.

Witnessing the effect, as we do daily, which this salt exerts over epilepsy, it is surely not unreasonable to anticipate that it should exercise a similar restraining influence upon the nerve discharges of tetanus.

The case is further interesting from the record taken of the percentage and total amounts of urea passed in the urine for each twenty-four hours.

XXXIV.—*Chronic Parenchymatous Nephritis of Right Kidney. Left Kidney Small and Atrophied. Old Scrofulous Pyelitis.* By R. Southey, M.D. *Read April 27, 1877.*

MARGARET C., æt. 24, single, domestic servant, a large-framed, pale, lymphatic woman, was admitted into Faith Ward, Nov. 17, 1876, with the following history:—She had enjoyed fair health up to the previous week, so as to have been able to get about and do her work; she then got wet through, and her legs began to swell. She admitted having previously—for one month, perhaps—suffered with headache, occasional shivering, and sickness after food, as well as anorexia.

Ten years ago, at the age of 14, she was in the hospital for dropsy, after scarlet fever.

State on Admission.—Skin dry, harsh, and rough; abdomen full; legs highly anasarcous; face pale and flabby; eyes watery; mouth dry; tongue rugous, brownish-furred posteriorly; appetite *nil;* bowels loose; catamenia regular, every three weeks.

Thorax.—Præcordial dulness increased; apex beat indistinct, first sound prolonged; pulse of high tension, fall not quite regular; temp. 98·5°; resp. 24; slight cough.

Lungs.—Resonance impaired at both bases posteriorly; no moist sounds.

Urine passed only in quantities of a few ounces per diem for last three days, high-coloured, but not by blood, nearly solid with albumen.

Treatment.—Ordered milk diet, fish, and pudding; a warm bath at 100° every afternoon, in which she was directed to

stay an hour, or until she perspired well; to be allowed a little wine and water if faint in bath.

Medicine.—Mist. sodæ tart. efferv. sextis horis: pulv. jalap. co. $3\frac{1}{2}$, if required.

Nov. 20.—Urine of previous twenty-four hours 15 ounces, sp. gr. 1028, high-coloured, slightly smoky, turbid, abundant sediment, containing epithelial casts, a few free cells and blood-corpuscles: solid with albumen.

Condition not improved; vertigo; nausea; bowels costive; appetite no better; pulse weaker.

On Nov. 23 she appeared always worse, and complained of being made weaker by the baths, which only acted upon her skin while she remained in the water; her headache increased, and as she seemed to dislike the jalap, and her bowels were still costive, I ordered a sulphate of magnesia draught to be taken occasionally, and hot air baths instead of hot water—or rather first the hot air, and then a wash bath in warm water.

Under this treatment she improved somewhat; the urine increased to an average of $1\frac{1}{4}$ pints per diem, otherwise was unaltered in its character; the anasarca remained stationary, and there were no uræmic symptoms beyond sickness and occasional headache.

Dec. 27.—Mean average quantity of urine 20 ounces per diem, acid reaction, solid with albumen, sp. gr. 1030.

Casts contain a few large granules, some fatty, others deeper coloured and more waxy-looking; fewer free blood-cells, many leucocytes, or white cells.

Jan. 5.—For the last week and more the sickness has become more and more distressing and exhausting to her; for a while acids—vinegar and horse-radish sauce—relieved her, then the acid tartrate of potash, lemon-juice later on, the nitro-hydrochloric acid, and tincture of capsicum, remedies all of which I have found useful against this most ill-omened and pertinacious symptom; but at last I resorted to ten-minim doses of the liq. morphiæ hydrochlorat., which she took two or three times a day, always with great relief to this most distressing symptom. Not merely did the morphia not interfere with her taking nourishment, it became the only means whereby her stomach could be induced to hold any nourishment within it.

The further progress of her case may be shortly summarised:—Although every possible effort was made, her skin could not be brought to perspire so as to relieve her at all;

it was always as dry and harsh as a nutmeg-grater. She was washed with soft soap, oiled, and rubbed, but although the vapour bath did act, it produced but very little free perspiration, and the hot bath could not be tolerated at all, her temperature always rising in it until she became faint, and her headache being increased by it.

Careful examination of the urine was instituted from time to time, from which the following table has been abstracted:—

Date	Urine, quantity in twenty-four hours	Reaction and Colour.	Sp. gr.	Albumen	Urea, per cent.	Urea, total amounts.
	cc.				grammes	grammes
Jan. 19	430	Acid, smoky Red amber.	1030	loaded	1·6	6·88
„ 20	210	—	1030	—	1·6	3·36
„ 22	210	—	1026	—	1·5	3·15
„ 23	440	—	1027	—	1·5	6·6
„ 24	480	—	1028	—	1·6	7·68
„ 25	480	—	1027	—	1·55	7·44
„ 26	260	—	1027	—	1·49	3·64
Feb. 7	520	—			1·75	9·1
„ 19	160	—	1028	—	1·7	2·72

On Feb. 17, the œdema of the lungs being manifestly increasing, the breathing quicker, the lung-resonance more impaired, and the general anasarca of the whole of her body, as well as ascites, being extreme, the legs being distended almost to bursting, and as large as I have ever witnessed them in renal anasarca, I determined to endeavour to relieve her dropsy by mechanical means, and to this end employed an apparatus which is, I believe, novel in England. I had a small trochar made, with tiny well-fitting canulas, but little larger than the ordinary subcutaneous injection needles; these canulas, instead of terminating with a protecting rim, end with a little bulbous extremity.

They are inserted into the subcutaneous cellular tissue with great facility, and with no more pain than the ordinary needle-prick produces; the canula, inserted parallel to the surface, is left stuck in the skin; and a long, fine capillary indiarubber tubing is now drawn over the protruding bulb and tied *in situ*. This tying in of the canula is not essential or even often necessary.

The long ends of the capillary tubes are now carried outside the bed and into a pan beneath it, into which the serous dropsical fluid drips or drains away.

One drainage canula was inserted into each leg, and through the two tubes about 2½ pints, or, in fact, 71 ounces, of dropsical effusion drained away each 24 hours, with considerable relief, of course, to the tension.

The slightest possible redness appeared round the canula in the right leg on the third day after its insertion; it had been introduced, I thought, rather too deeply; it was, therefore, removed, and another canula inserted more obliquely in the same limb, but at some distance from the original one.

Although the dropsical fluid was thus completely carried away from the bed, no leakage whatever took place beside the tube, and, therefore, no maceration of the skin or ulceration. The patient, however, improved in no essential particulars; the weather was very cold and damp, and the disease ran its ordinary course to a fatal issue by œdema of the lungs and pericarditis, little, if at all, influenced in its course by the procedure adopted.

The serous fluid thus removed from the legs was carefully examined, and the following table contains an accurate account of it:—

Date.	Quantity, per twenty-four hours	Reaction and Colour.	Sp. gr.	Albumen	Percentage of Urea	Total Amount of Urea, per twenty-four hours
	cc.				grammes	grammes
Feb. 17	1510	Alk. straw.	1014	$\frac{1}{10}$th	0·2	3·02
„ 18	3160	—	1015	$\frac{1}{10}$th	0·2	6·32
„ 19	2070	—	1014	$\frac{1}{10}$th	0·225	4·658
„ 20	2360	—	1014	$\frac{1}{10}$th	0·225	5·9
„ 21	1860	—	1014	—	0·3	5·58
„ 22	1200	—	1014	—	0·23	2·70
						28·23

Urine.—Mean average of six days, 2026 = 71 ounces.
Urea.—Mean average of twenty-four hours = 4·70, or 72·56 grains.

The features of interest attaching to this dropsical fluid in advanced renal disease are several:—

1.—The specific gravity, which averages half that of the urine, secreted at the same time.

2.—The quantity, which, although only draining away by drops, averages over 71 ounces each twenty-four hours.

3.—The amount of urea which thus escaped, and averaged 4·70 grammes, or 72·56 grains each twenty-four hours.

4.—The amount of urea escaping in the dropsical fluid is thus shown to be considerably in excess of that which was being separated by the kidneys at the same time.

The patient died without having experienced any uræmic attack from the beginning to the end of her illness, succumbing finally to slight pericarditis, with effusion and lung œdema, her end in this respect being in accord with what is often observed in cases of chronic parenchymatous nephritis.

The post-mortem examination, made thirty-four hours after death, showed a body highly anasarcous.

Lungs.—Right, old pleural adhesions at base, emphysema along edges; much œdema. Left.—Fine layer of recent lymph on pleural surface, substance similar to that of right. Both pleural cavities contained about half a pint each of clear fluid.

Pericardium contained a considerable amount of turbid serum, with some recent lymph about apex, and posterior adhesions.

Heart.—Left ventricle slightly hypertrophied. Aortic valves thickened and apparently incompetent; no vegetations about them. Mitral valve slightly thickened at edges and tendinous cords; one small vegetation. Tricuspid and pulmonary valves normal. Aorta normal.

Abdomen.—Considerable ascites; no peritonitis.

Liver, spleen, and pancreas normal.

Intestines.—Ulceration reaching round the gut nearly ¼ inch wide, situated at upper part of rectum; elsewhere normal.

Kidneys.—Left twice the normal size; capsule not adherent; surface pale and smooth, but presenting several cysts.

Pyramids pink; margino-medullary portion streaked with opaque tubule radiations; cortical portions presenting much fatty degeneration of glandular portions of tubules, but some amount of comparatively healthy cortical substance; some cysts near surface; no amyloid degeneration.

Right kidney, quarter normal size; a mere shell of thickened, not separable, fibrous capsule, with lobulated partitions, containing softened, pultaceous, gritty white material, which entirely filled the septula renum and pelvis of the organ; the ureter was pervious, but no trace of renal structures remained perceptible in the obsolete nekrobiotised case of a kidney which marked its site.

Remarks.—I have brought forward the above case more for the object of showing the Society a new mode of dealing clinically with dropsical effusions than upon its own intrinsic interest.

All who have had the treatment of extreme renal or cardiac dropsy to deal with are acquainted with the serious drawbacks attending ordinary puncture of the distended limbs. The fluids which drain away when the legs are pricked keep the patient's skin macerated in an irritating and decomposing animal fluid, which quickly stinks, and is otherwise harmful by provoking ulceration at the points of puncture; sloughs and erysipelas are thus often produced, which seriously accelerate the patient's death and often greatly increase the suffering of the few last days of life. Further, the constant wetting of the bedclothes keeps the patient cold and damp, and militates thus against recovery.

The plan of draining the legs by canulas inserted beneath the skin is suggested in Prof. Bartel's work, and has, no doubt, been already employed by him; his principle is exactly the same as that which I have adopted. When the capillary tube is attached, no oozing takes place beside the canula into the bed; the long syphon limb is enough to attract it preferentially by simple gravitation under the bed.

The bedclothes are thus allowed to completely enwrap the patient after the tubes are inserted, and the bed is kept both warm and dry.

One tiny silver canula in each leg is enough for the purpose in view.

In the case narrated no irritation or ulceration was provoked by the canula, although retained seven days *in situ.*

The whole apparatus seems almost too simple to dwell upon; it is on the table for inspection. But great and useful ends are usually attained by the simplest means, and in offering this method of treating dropsy to the profession, I believe I am introducing a system of treatment which will quickly commend itself in practice. What I wish is that it should be widely tried, for I believe it likely to prove as great a boon to doctors and nurses as to humanity in its hours of sorest need.

My thanks are due to Mr. Darbishire, my house physician, for the carefully-taken notes and urea observations in this case, and for carrying out the details of this drainage treatment.

XXXV.—*Case of Badly-United Fracture of the Bones of the Leg, Treated by Excision of a Wedge with Linhart's Chisel.* By CHRISTOPHER HEATH. *Read April* 27, 1877.

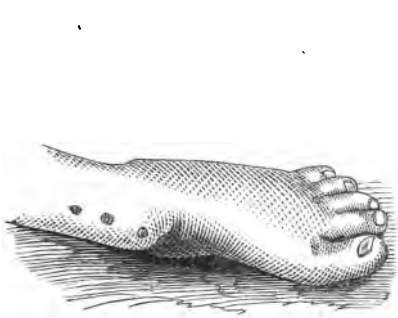
W. C., æt. 46, labourer, admitted into University College Hospital, March 8, 1876. He gave the following history:—Eighteen weeks before, he fell out of a cart, his foot caught in the reins, and his left leg was doubled under him. The leg was fractured just above the ankle, and the bone projected through a wound on the inner side. He was treated with straight splints without foot-pieces for nine weeks, and then a starched bandage was put on as low as, but not over, the ankle; this galled the heel, and sloughing took place. When admitted there was seen to be great deformity about the left ankle, the foot was partially dislocated outwards, the lower end of the shaft of the tibia projected strongly on the inner side, and the internal malleolus was displaced outwards with the foot, and united to the tibia in this position. The fibula was bent forwards and inwards 3 inches above the heel: it had evidently been fractured here, and the lower fragment had been displaced forwards and inwards. The foot was at a right angle with the leg, and movable through an arc of 15°. Over the heel the skin was sloughing for an extent of surface 2 inches by 1 inch. There was a cicatrix in the skin over the projection of the tibia. The man was well nourished and healthy.

The sore on the heel was dressed with boracic acid lint, and progressed well; but a few days after admission the cicatrix of the original wound broke down, leaving a sore about the size of a sixpenny piece.

On May 3, when these wounds had healed up, Mr. Heath operated to correct the position of the foot. Esmarch's bandage was applied; a transverse incision was made over the lower end of the tibia on the inner side, and a wedge-shaped piece of the bone was removed with a Linhart's chisel, the bone was quite divided with the chisel; but as the foot could not be replaced, the fibula was also divided through the same wound with the bone forceps, and then the foot was brought into a straight position with the leg, the lower fragment being slightly in front of the

upper. The wound was plugged with antiseptic gauze, and the limb was placed on a straight back-splint, with a vertical foot-piece, and an antiseptic dressing placed over all; the whole operation was performed under the carbolic acid spray.

The patient went on well until May 9, when it was found that the pressure of the splint on the heel had led to the breaking down of the cicatrix, and therefore the back-splint was replaced by an outside Cline's splint, great care being taken not to displace the bones. The soft parts over the outer side of the ankle became swollen and red, and on May 19, fluctuation was detected, and an incision was made in front of fibula, which liberated a quantity of pus. A drainage tube was placed in the opening; the Cline's splint was bracketed opposite this wound. From this time the case went on well, the temperature remaining almost if not



quite normal, the discharge being quite sweet and small in amount. On June 7 the incision into the abscess had quite healed, and the other wound was only superficial. There was no mobility in the length of the tibia, and there was considerable bony thickening at the seat of the operation. The position of the foot was much improved, being nearly in a straight line with the leg, but the forepart was slightly inverted. The measurement from the lower edge of the patella was $1\frac{3}{4}$ inch less on left than on right side. The pressure of the foot-piece of the splint has produced a small slough on outer side of the foot. The wounds healed up, but on June 13 the operation wound broke down and exposed the callus, and portions of this which were bare and necrosed had to be scraped away two or three times before it would heal up. The foot was slung in Salter's swing-cradle, a strap

passing between the toes and front of tibia to keep the foot in the right position.

The patient left the hospital on July 19, but has since then been attending as an out-patient. He was brought before the Society, and photographs and casts of his former condition were shown.

The foregoing case was an example of deformity after fracture arising from a cause which I believe to be not unfrequent, viz., the application of insufficient retentive apparatus when the patient begins to get about, and want of attention in keeping the foot strictly at right angles with the leg. The deformity was such as to prevent any useful employment of the limb, and the case did not seem a very favourable one for interference. Refracture of badly united shafts of bones has been advocated and practised by the late Mr. Skey and other surgeons, but it was clearly impossible to break the union so close to the joint as in this case, and I therefore determined to cut the bone and remove as much as might be necessary to restore the proper line without interfering with the ankle-joint. Linhart's chisel (which was brought under the notice of the Society last year) proved a very efficient instrument for the resection, and the operation having been conducted antiseptically according to Lister's method, the patient had less constitutional disturbance than he would otherwise have done. It should be mentioned that the gauze dressings were applied outside the splint and pad, which were covered with waterproof, and only changed as noted in the report of the case.

XXXVI.—*Ascites in a Young Child. Treatment by Paracentesis and Copaiba. Recovery.* By W. H. Day, M.D. *Read April* 27, 1877.

CAROLINE B, æt. 5½, was admitted into the Samaritan Hospital under my care on October 4, 1875, described, from what is recorded in my case-book, as suffering from enlargement of the liver and ascites, an opinion which I had hastily arrived at, and, as the case proved, erroneously.

History.—She was one of ten children, all born healthy; one child died of consumption at 4½. She is said to have had erysipelas three years ago, but from the description it

was probably ecthyma, or some similar pustular disease; she was ill two months and has not been the same child since; she has never had whooping-cough, measles, scarlet fever, or peritonitis of any degree or kind. Three months ago she first complained of pain in the stomach, when the body was noticed to be large, and it has increased in size ever since. The abdomen is very swollen and prominent, especially in the lateral regions; 2 inches above the umbilicus it measures 24 inches, at the umbilicus 22 inches, the area of liver-dulness is apparently increased, so far as it can be ascertained, but the outline cannot be felt from the amount of fluid in the abdominal cavity; the percussion note is tympanitic along the centre from the epigastrium to the pubis (intestines), and both lateral regions are dull; the chest looks very small and narrow, on account of the distended abdomen, and the lower ribs are pressed outwards by the fluid; the heart's apex is heard in the fourth left interspace, and the beat is loudest immediately external to the nipple; no morbid sound is anywhere detected. Respiration is very defective in the lowest lobes of the lungs; in the left lateral region it is good; in the right it is barely heard, though the intercostal spaces are everywhere distinct. When the hand is placed over the ribs in this situation, and the anterior surface of the abdomen is slightly struck, the impulse of fluid is felt against the palm of the hand; the lower lobes are dull on percussion; the respiration is clear under both clavicles, the percussion note is resonant. Temperature 99·2°; pulse small, 120; respiration 32. Urine very clouded, highly acid, and throws down a copious deposit of white lithates; sp. gr. 1032; no trace of albumen. The bowels are open twice a day, and the motions healthy; there is some thirst, and the appetite is voracious. The tongue is large and pale. The child complains that she is always cold, and there is much wasting. A diet of milk and beef-tea was ordered, 10 grains of compound jalap powder every morning, and half a drachm of the syrup of the iodide of iron three times a day.

Oct. 20.—Since last report she has got bigger in the body, thinner in the limbs, and more pinched in the face, the temples sinking in, and the malar bones being prominent. She now measures 28 inches. There is a large amount of free fluid in the peritoneal cavity, and the superficial veins of the abdomen are slightly distended, but the abdominal walls are not glistening; the urine throws down abundance of

lithates, a third of the quantity being made up of this deposit. She was ordered 5 minims of tincture of digitalis and 8 grains of citrate of potash in half an ounce of infusion of orange-peel three times a day.

Nov. 5.—The girth of the abdomen at its widest part now measures 28½ inches, but in other respects the local and general conditions have undergone no change. Ten grains of sulphate of potash and 3 of powdered rhubarb were prescribed every other morning. The digitalis mixture to be discontinued, and the iron mixture to be resumed. Two ounces of wine are allowed daily.

13.—The urine has been much more scanty during the last few days, but the bowels have acted very freely from the powder; she is thinner and paler, and the abdominal distension has no doubt pressed on the renal vessels, and lessened the secretion. The superficial veins ramifying over the abdomen are more enlarged and tortuous. In the recumbent posture the pulse is very small; respiration 32.

Note.—This ascites is not due to heart or kidney disease, but probably to general debility and a strumous state of the peritoneum. It may be owing to some temporarily enlarged lymphatic glands pressing on the portal vein near the liver. A case supposed to have arisen from this cause is recorded in the 'British Medical Journal,' November 20, 1875, by Dr. Murchison.

Nov. 17.—As the child was daily getting worse, at my request Mr. Knowsley Thornton tapped to 84 ounces or 5 pints and 4 ounces, and drew off a straw-coloured, syrupy fluid, like ordinary ascitic fluid; the sp. gr. was 1020, alkaline, milky white, and semi-solid on boiling with acetic acid. No enlargement of the liver or spleen could be felt.

Examination under the Microscope.—Mr. Thornton furnished the following report:—'The white flocculi seen after the fluid has stood for a little while are found under the microscope to consist of a fine fibrillar stroma (probably artificial) entangling a large number of round granular cells, varying much in size, and occurring singly or in groups. The majority of the cells are about the size and have much the appearance of a pus or lymph corpuscle. Many are much smaller and many much larger, but none are so large as those one commonly meets with in the adult peritoneum, nor is there the same variety in the shape of the cells. The great majority are round, but some few have the characteristic pear-shape. Some contain large clear nuclei. Many contain

a number of bright refractive granules scattered through their substance. Acetic acid clears them, showing a single large nucleus or more; in some a little group, just as in a pus or lymph corpuscle. *Indeed, these latter are probably lymph cells.* The fibrillar material swells and becomes granular under the action of the acid, and probably also contracts longitudinally as the groups of cells are drawn closer together.

24 (seven days after tapping).—Since the tapping the urine has become clearer, and each day since the quantity has averaged from 19 to 23 oz. There is no cough, and the respiration is much more distinct and clear in the lower lobes of the lungs.

Dec. 1.—As the urine remains clear and copious, and the bowels are free, I omitted the iodide of iron, and ordered the tincture of the perchloride of iron, in ten-minim doses, three times a day.

26.—She has been getting much larger of late, and there is a considerable quantity of free fluid in the peritoneum. The circumference of the abdomen around the umbilicus is now 27 inches. The quantity and quality of the urine have not in any way varied during the past fortnight. She sleeps well, and takes her food with appetite. I now commenced the use of copaiba resin, and gave the formula recommended by Dr. Wilks. It is that used at Guy's Hospital.* The patient took four grains of copaiba resin three times a day.

Jan. 5, 1876 (ten days after commencing the copaiba).—She has taken the medicine regularly, without disagreeing in any way either with digestion or appetite; on the contrary, as the abdomen lessened in size the constitutional state improved in every respect. The urine is clear and free, and throws down no deposit; the average quantity daily since the commencement of the tapping has been from 24 to 26 oz., so that in this respect the resin does not appear to have greatly stimulated the kidneys. She now measures 25 inches round the umbilicus, two inches less than ten days ago. The respiration is quite free, and there is no pulmonary congestion whatever.

26.—She is now fast gaining flesh, and the face is well filled out; circumference of abdomen 23½ inches.

March 9.—Has gained flesh, and looks like another child.

* 'Ascites speedily Cured by the Resin of Copaiba.'—*British Medical Journal*, December 25, 1875, p. 780.

The edge of the receding ribs is very discernible, and the finger can now just feel the edge of the liver. The abdomen is quite soft, and the subcutaneous tissues more developed; umbilical measurement 23 inches.

26.—Measurement round umbilicus 22 inches. The gums are red, and the tongue smaller and firmer, there being only a little whitish fur at the back, which, being detached here and there, gives it some remblance to a white strawberry. She has gained greatly in weight; and, except being rather pallid, looks in robust health, the cheeks being full and plump. Spleen healthy.

May 20.—She measures 22½ inches; so that she is now remaining stationary, the half-inch increase of size being fully accounted for by the general increase of bulk. The abdomen is natural in shape and to the touch, and her limbs are firm and strong. The mixture has been continued up to the present time, which seems to have acted as a general tonic. She has taken it uninterruptedly for five months, and no other drug.

June 4.—She was in every respect well.

Jan. 20, 1877.— Since last report I have seen her from time to time. She has remained well, without any return of the symptoms, in the condition we now find her.

Remarks.—This case, in the absence of renal disease, or of those ascertained causes which obstruct the return of blood through the liver or heart, may be put down to some anæmic condition of the system, by which the peritoneal membrane or the lymphatics favour the accumulation of serum in the cavity of the abdomen. There was never any evidence of peritonitis, and in the absence of pain, vomiting, or jaundice the liver is to be excluded as an organ having any share in the symptoms. The effusion was of a purely chronic character, unconnected with any form of glandular disease or tubercular deposit. It may have been due to increased activity on the part of the epithelial cells, and the microscopical appearance of the fluid appears to justify the hypothesis. An impediment to the passage of blood along the portal vessels must also be discarded. I believe that the anæmic and cachectic state of the system, in the absence of any visceral disease or tuberculosis, will be sufficient to account for the effusion, and these are the most favourable cases for recovery. But deficient food, damp, and exposure may be factors in the complaint, by inducing a low and insidious form of inflammation.

Hepatic disease is the most frequent cause of abdominal dropsy in children. We have, indeed, come to regard it as one of the most certain causes, so that when we see a case of ascites in a child we immediately declare the liver as the real offender, and perhaps too hastily. In the present case we must exclude the idea that any enlarged mesenteric glands, by causing irritation and friction of the peritoneum, could induce the effusion, for there was no fever, no pain, no tenderness; yet it was well to be aware of the circumstance that a ravenous appetite, emaciation, and moderate thirst are symptoms we often find in mesenteric disease when the enlarged glands cannot be felt. Ascites, then, may depend on some morbid condition of the capillary vessels or perhaps on anæmia. It is not necessary that we should meet with disease in the abdominal or thoracic viscera to account for it; cachexia and anæmia are enough to produce it. As to treatment, all the remedies which increase the action of the skin, kidneys, and bowels had, nevertheless, no effect in lessening the fluid; they failed, as they often do, to bring relief in this disease. The pallor of the patient, and her wan and delicate state, contra-indicated, to my mind, the use of mercury or of iodide of potassium. Iron, which was indicated as a blood-restorer, failed altogether, after a fair trial.

What is the large belly in delicate children especially due to? It is seen in weakly and not in strong children; and though often due to the accumulation of flatus, as the product of ill-digested food, the parietal walls of the abdomen yield and become stretched. I believe that this condition is not uncommonly attended with more or less secretion of peritoneal fluid. The blood being thin and watery, favours the exudation. Cases from time to time have come under my notice in which the belly has grown disproportionately large to the rest of the body, when there has been no history of peritonitis, simple or tubercular—no affection of any internal organ that could be ascribed as a cause of the dropsy; and I should have hesitated to bring this isolated case before the notice of this Society if other similar (though less typical cases) had not yielded to the use of the copaiba resin, when tonics, diuretics, and purgatives had failed.

The slight enlargement of the abdominal veins, in the absence of any direct inosculation with those of the thoracic parieties, taking all the other symptoms into account, scarcely justify the suspicion that the dropsical effusion was induced by any interference with the portal circulation.

Lastly, the important question arises, is ascites ever a primary disease? Do we not—in children at least, sometimes meet with more or less fluid in the abdominal cavity, independent of any visceral disease?

If, then, paracentesis is advisable, when ought it to be performed? I believe that to delay it till the abdomen is enormously distended is not good practice. To remove the accumulated fluid in such cases, and so to restore, for a time at least, the normal balance betwixt effusion and absorption, is as rational, it appears to me, as to bleed in cases of great distension of the right heart, when we have reason to know a balance is once more so restored.

XXXVII.—*A Case of Excision of the Os Calcis and the Astragalus in which the Second Row of Tarsal Bones was drawn underneath the Malleoli.* By Furneaux Jordan. *Read May* 11, 1877.

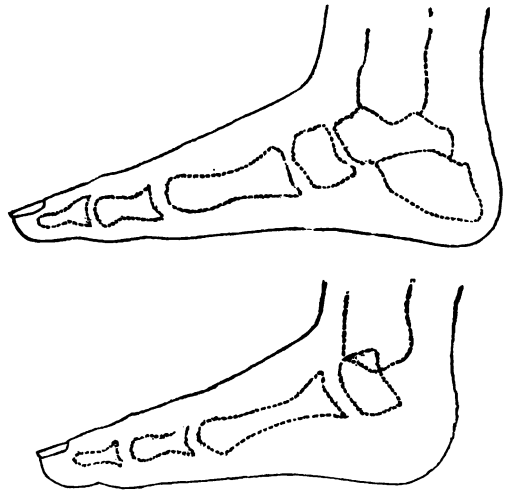
A GIRL, Maria G., æt. 14, came under my care at the Queen's Hospital with, apparently, caries of the os calcis. She was sent to me by the authorities of the 'Middlemore Refuge,' an institution which takes children from the gutter, and feeds, clothes, and educates them for service in Canada. She had been taken from the streets with the ready consent of drunken relatives. When, however, it was found, shortly after admission, that there was disease of the bones of the foot, a difficulty arose: it seemed inhumane to send her back to careless relatives who were glad to be rid of her, and yet if she lost her foot she could not well be trained for emigrant service.

As the disease seemed limited to the os calcis I gouged out, as I believed, all the carious bone. But the sinuses did not heal. A second more extensive gouging was followed by no better result. Indeed, I feared, as other surgeons have feared before, that each gouging gave rise to further osteitis and further caries. Each operation was followed by careful and prolonged rest, immobility, and elevation.

As the direction of the carious area seemed to extend upwards, and new sinuses also pointed to the implication of the astragalus, I determined to excise both the os calcis and

the astragalus. In the earlier gouging operations I made the incisions in the sole over the heel in its long axis, and parallel with the outer border of the tendo Achillis. When it seemed desirable to excise the two bones I wished to avoid making another deep cicatrix, and therefore I took the line of the old incision, extending it upwards at each end, so as to make a somewhat semilunar flap, the convexity of which looked downwards. This flap was at the outer aspect of the heel, and, when lifted up, gave ready access to the diseased bones. The joints having been opened, first in front and then above, the bones were removed.

The after-treatment required considerable care to keep the foot in the exact axis of the leg. After a little experi-



ence it was found that slinging up the anterior part of the foot—in other words, holding the leg up by means of the toes—secured the best position. In all other respects the progress of the case was most satisfactory. The shock and reaction were of no moment, and the healing went on solidly and certainly, so that in eight or ten weeks the wound and the sinuses had healed, and the foot could be moved and handled without pain.

But now a curious circumstance attracted notice. It was found that the foot had not only become gradually shorter, but that the first row of tarsal bones having been removed,

the second row had in some degree taken their place. The scaphoid and cuboid bones were partly under the malleoli. The tibia and fibula were thus kept at some distance from the ground when the foot was put down. How was this brought about? Probably by the action of the muscles which lie at the front and sides of the ankle. In such action the tendo Achillis could, of course, take no share. The incident was unlooked for, seeing that before the operation the scaphoid was held at some distance from the tibia by its articulations, and that during repair the foot was suspended by its toes.

I feared that the remaining portion of the foot, when the weight of the body came to bear upon it, would ride or turn upwards, and thus give rise to inconvenience and unsightliness. That fear has not been realised. It is now nearly twelve months since the operation was performed, and the foot cannot be displaced either by the weight of the body or by the surgeon's hand. Some retentive apparatus is still worn for the purpose of walking.

The affected foot is one inch and a half shorter than the left foot, as measured from the tip of the inner malleolus to the tip of the great toe, this distance being seven inches in the sound foot and five and a half in the affected foot. The leg on the operated side is one inch and a quarter shorter; the measurement being, from the lower border of the patella to the centre of the heel, fourteen inches on one side and fifteen and a quarter on the other.

In concluding I wish to ask two questions. Assuming that it is desirable to bring the scaphoid and the cuboid under the malleoli in excision of the os calcis and the astragalus, can any special operation, or dressing, or position facilitate such a result? The next question is perhaps less important. Why should we fear to make incisions in the sole of the foot? I have repeatedly made free incisions into the plantar surface in operating for caries of the os calcis; the resulting cicatrices have always contracted so as to form deep fissures, and in no case has the weight of the body given rise to later inconvenience. In the cast which is before the Society the deeply indented scar is very marked, and, curiously, seems to be at the outer border of the sole, notwithstanding that it was really made in it.

XXXVIII.—*On a Fatal Case of Syphilis contracted from the Hereditary Form of the Disease.* By T. S. Dowse, M.D. *Read May* 11, 1877.

H. B., æt. 9, admitted into the Central London Sick Asylum, January 12, 1875. Her father is living, æt. 56; he denies having had syphilis, but suffers from rheumatism and asthma. Her mother is living, and is a strong, healthy, in fact, robust-looking woman. She has five children living, who are quite healthy, and, according to her statement, never gave evidence of syphilitic hereditary taint, yet we are informed that she had eight miscarriages, which occurred between the births of the other children.

This child, H. B., according to the mother's account, was born without a blemish, and continued to grow up a strong healthy girl, until the month of July 1873.

At this time she was living a neighbour to a family who were known to be syphilised, and she had an especial fondness for one of the children, who, in addition to other sores about the body, was suffering from mucous tubercles around the anus. She was constantly nursing this infant; and neglecting a scratch upon the flexor surface of her right forearm (the arm upon which she carried the child), she soon found it became extremely painful, and shortly formed an open wound with indurated edges. The lymphatics became affected, and the axillary glands enlarged upon this side.

The precise time of incubation is unknown. From a fine healthy girl she became rapidly emaciated, complained of aching pains all over the body, and then followed the train of signs and symptoms which I will endeavour to portray.

1. The sight was normal; no ulceration of the cornea, no interstitial keratitis, no pigmentary change of the choroid or optic neuritis.

2. In reference to the nose and nasal passages there was considerable destruction of the soft parts (as seen in the photograph), which extended to the pharynx, where a similar change was going on. In some respects the ulceration of the alæ and frenum of the nose presented many of the characteristics of lupus; and, had it occurred without any other evidence, it would have been a difficult matter to have distinguished between the two. There was no caries of the bones.

3. There was no palsy of the muscles of the eyeball or deposits in the iris. There was chronic ulceration of the tympani, and the left was perforated; both ears at times discharged profusely. This condition gave rise to considerable deafness.

4. There were no subjective phenomena showing that the glosso-pharyngeal, pneumogastric, and spinal accessory nerves were implicated, such, for instance, as we often find in the course of diphtheria. I note this because it is of comparative clinical value, as we shall see.

5. The tongue was free from any signs of disease, either epithelial or gummatous. The ulceration was seen to extend over the post pillars of the fauces, the pharynx, the epiglottis, vocal cords, and arytenoid cartilages. The voice was scarcely audible, and deglutition was all but impossible. The teeth were pretty regular, somewhat serrated, and the incisors of the upper jaw were cupped.

Now, concerning the eruption on the skin. It first made its appearance as a lenticular syphilide over the head and back. Her mother says that the skin first became irritable and then a number of small shot-like bodies made their appearance. This was a stage in the disease which existed previous to my seeing her. . . . . In some few instances these papules were converted into vesicles and pustules, giving rise to an ecythma, but the papules for the most part scabbed and gave out a fœtid discharge. The crusts so formed rapidly accumulated, and the surrounding skin by contact with the discharge participated in the destructive change until it seemed satisfied with the progress which had been made; then there came a period of quiescence, the crustations came off and in the majority of instances left a healthy granular surface underneath, which very rapidly cicatrised. The ulcerations were never very deep, edges hard, and of a pinkish colour, usually irregular in outline, and invariably symmetrical.

I was much interested to notice that the cicatricial tissue often participated in successive crops of the eruption, and that the incrustations were rather allied in colour and consistence to pemphigus than to rupia. The chest, abdomen, flexor surfaces of the arms and thighs were comparatively little if at all affected, but the head, the nose, the angles of the mouth, the extensor surfaces of the extremities, and the back were covered.

The rapidity of change from the destructive to the repa-

rative process was a marked feature in the case, and is especially typical of this form of ulceration. The latter was always indicative of a more healthy standard.

Upon several occasions I thought her well enough to be discharged, but refrained from doing so, on account of her constitutional state. Her condition, which had been variable for over a year and a half, was now somewhat altered in character, by the evidence of lung-disease and increased prostration. Her temperature, which had always been fluctuating, became more so, and would range from normal in the morning to 104° in the evening.

There was dulness with bronchophony at the apices and middle of both lungs, and copious rusty-coloured sputa. The act of swallowing was attended with so much difficulty (the food returning through the nostrils) that for a long time she was fed solely by nutrient enemata. There was so much laryngeal stridor that more than once or twice it was thought that tracheotomy would have to be done, to prevent asphyxia.

The condition of urine was noted. At times it contained a trace of albumen, at others not; its gravity ranged from 1025 to 1035, and sugar was abundant. No organic kidney change was discoverable by the microscope.

From this time (April 1) until a few weeks preceding death the clinical features of this case were noted with some accuracy, and I had hoped to have given the Society a quantitative chemical analysis of the excreta &c., as well as that of the tissues after death, but in this I was disappointed; yet the table, showing the weight of ingested material as compared with that of material egested, which I now send round, as well as charts of temperature, pulse, and respiration, are extremely interesting. The glands of the right axilla, which were first enlarged, remained so until the last, but no others were implicated except those of the right groin.

On July 9 she died, apparently from exhaustion and want of nutrition.

I can scarcely pass to the pathology of this case without making some few remarks on the treatment, and here I consider myself to have failed, for the reason that I had a disease to treat where nature was doing battle most manfully. It put me in mind of those vicarious changes due to some constitutional, hereditary, or predisposing cause, let it be gout, syphilis, or tubercule, where by treatment you can drive it from one part to another, but it cannot be said to be eradicated.

This is manifest in gouty eczema when cured resulting in gouty bronchitis, pneumonia, or endarteritis.

To say that I tried everything for this poor child is no exaggeration.

Mercurial inunction and cod-liver oil, with quinine and phosphorus, seemed to do her more good than iodide of potassium, the salts of iron, and chlorate of potash.

At the post-mortem examination, made twenty-four hours after death, the cicatricial tissue which quite covered the back was found to be firm. There was no trace of any recent ulceration, excepting that of the nose, larynx, and pharynx, which never took on reparative action, like that of the other parts.

The scalp over the crown of the head was ulcerated through, and here the pericranium was a little changed, but beyond this there was no periosteal lesion or any sign of bone-disease.

The membranes of the brain were healthy, the brain-substance and motor ganglia also, but very pale. The lateral ventricles contained an abnormal quantity of fluid, and the surface-matter of the floors was slightly softened, as though a form of chronic hydrocephalus had existed.

Upon removing the thoracic viscera, larynx, and pharynx marks of old cicatrices and recent ulcerations were plentiful enough, extending down the trachea and even to the larger bronchi. The mucous membrane was extremely congested.

The lungs completely filled the thoracic cavity; there were no pleuritic adhesions. There were some irregular patches of consolidation at both apices, presenting an amorphous outline to the naked eye.

The heart and thoracic vessels were healthy.

The kidneys were pale, and the capsules were not adherent.

The liver was normal.

Remarks.—The case is of some rarity, and I have for this reason brought it before the notice of the Society. A similar one in many respects is to be found recorded in the 'Lancet' (June 20, 1874), by Dr. Sparks, which he terms Ulcerating Syphilide, in a child twelve years old, but here it really appears to have been a question as to whether the eruption was syphilitic or not, for there was no evidence of either congenital or acquired disease; in fact, no inference could be drawn that the child had contracted syphilis beyond the fact that she was employed in a brothel. The patient got well.

I find most writers upon syphilis speak of the rarity of rupia in syphilitic children. Zeissl says that with his large opportunities he had rarely seen such cases, and Cullerin remarks that he has never seen it. The clear history in my own case appears to give it greater interest. For the child contracts the disease in its secondary stage, and then gives evidence of a secondary eruption which rapidly passes into the tertiary form; and it must be noted that the teeth were essentially of the syphilitic congenital type, so that in all probability (yet I must admit that the direct evidence is not very strong) we have an instance of a congenitally syphilised child re-acquiring hereditary syphilis, which proves irremediable, and kills by its devitalising action.

She was of fair complexion, with light very fine hair and long eyelashes—just a girl in whom lupus might in all probability be anticipated—and it certainly became a question as to the exact difference between the ulceration about the nose and lupus, and might lead up to a point for discussion as to how far lupus might originate from and be due to a modification of the prime syphilitic agent. And again, should it be correct that the patient was the subject of hereditary syphilis, it goes to prove what has hitherto been to a great extent denied, that hereditary syphilis can be acquired in a girl the subject of hereditary taint.

Mr. Hutchinson, in his syphilitic aphorisms, says:—'It is in a high degree probable that inherited taint does, if not actually protect, at least tend much to modify the liability to acquired disease.'

The cerebro-spinal nervous systems were free from disease, which thus far bears out the generally received opinion that these centres are not prone to be affected by syphilitic changes of hereditary origin.

Report of Microscopical Examination of Lung Tissue by Dr. COUPLAND.

The portions of lung given me for examination present to the naked eye two marked appearances—the one a somewhat diffuse fibroid change, and the other the presence of small depressed nodules collected in a group the size of a split pea, and arranged beneath the surface of the pleura.

The nodules or granulations are almost wholly composed of small rounded cells or nuclei very closely massed together. These elements are about the size of leucocytes, and in many of them with a high power a minute nucleolus can

be seen. They stain readily with logwood. In parts of one nodule the nuclear growth seems more abundant than in other parts, as if each nodule started from more than one centre. In none of the sections is there evidence of caseation, and in most the outlines of bloodvessels can be traced in the peripheral parts of the nodule. At their margins the nuclear growth invades the walls of the neighbouring alveoli, but to a very variable extent. Thus in some places the alveolar wall is several times its normal thickness, in other places it is not at all diminished. But undoubtedly there are far more nuclei present in the walls of the alveoli than are met with in healthy lungs. There is a noteworthy absence of intra-alveolar change; here and there fragments of epithelium still adhere to the walls, but no blocking of the alveoli with catarrhal products to any extent. Besides these changes (and especially marked in one of the portions of the lung submitted) there is much periarterial thickening, especially of the larger arteries, the outer coats of which appear to be composed of numerous interlacing bands of fibrous tissue. The elastic intima is wrinkled and folded, but no evidence of endothelium and certainly no proliferation of it in any of the arteries. The outer walls of the bronchi are also thickened more by small-celled growth (peribronchitis) than by developed fibrous tissue.

XXXIX.—*On a Case of Co-existing Abscess of Liver and Empyema, in which Paracentesis Thoracis was Performed.* By J. Pearson Irvine, M.D. *Read May* 11, 1877.

CHARLES Y., æt. 40, a commissionaire, came under the care of my friend Dr. Silver (to whom I am indebted for an opportunity of bringing the case under notice), in Charing Cross Hospital, on February 16, 1877. He entered the army at the age of eighteen, was sent to India at the age of twenty; and after passing five years in India, during which time he drank freely, and had several attacks of ague and dysentery, returned to this country, and was discharged from the army at the age of twenty-eight. There was nothing important in his family history beyond the fact that his father died from some chest complaint. He himself had a sore on the penis

when quite young, but never suffered from any of the usual secondary symptoms of syphilis.

From the date of his discharge from the army he had been free from ague and dysentery, and enjoyed good health until a little before Christmas 1876, when, after 'catching cold,' he began somewhat suddenly to suffer from cough, expectoration, and pains in the right side, which varied as time went on. The cough, however, became gradually more and more troublesome, and associated with dyspnœa, which of late had been the most annoying symptom. He did not spit blood, but sweated at night and lost flesh rapidly. His appetite was not much impaired. There was no history of rigors or of special pain in the right hypochondrium.

When admitted on Feb. 16 his morning temperature was 100·2°. It gradually rose to the evening of the 17th, when it was 101·4°. On the 18th morning temperature was 100·2°, evening 102·3°. On the 19th the temperature was down to 99°. The patient was lying on his back, with his head low, and breathing calmly, but complained of shortness of breath on the least exertion. His face was bronzed, but free from cyanosis. The skin was hot and dry. He was very anæmic and emaciated, and his nails were incurved. He complained of frequent cough, which distressed him day and night, and of pain in the right chest during coughing. The expectoration was moderate in amount and chiefly mucoid, but a little tenacious and slightly streaked with blood. The breath was offensive and the voice hoarse.

The superficial veins of the chest were distended. Over the left front there was well-marked rhoncal fremitus, with no loss of resonance or of movement, and the same was the case with the left axilla. But over the right front there was loss of movement with absolute dulness as high as the clavicle, not extending beyond the left edge of the sternum, except where it passed into cardiac dulness, which was transverse instead of vertical. Over the right side there were also increased resistance and tenderness on percussion. In the right back there was absolute hard dulness, on the left normal resonance. Over the whole right chest breath-sounds could be heard, but were feeble, distant, and bronchial; the vocal resonance was weak, though bronchophonic, and indistinct except near the upper dorsal spines. So also vocal fremitus could scarcely be felt on the right side. On the left side there was puerile breathing with mucous râles and natural vocal resonance and fremitus. The heart's apex was carried upwards and out-

wards, and the cardiac impulse was best felt outside the left nipple line. The liver was pushed downwards apparently, and in the right nipple line it could be percussed an inch at least below the margin of the ribs, but its edge could not be felt.

On Feb. 23 dyspnœa was much more serious, and the temperature had been almost uninterruptedly above 101° since the 19th. It fell on the 22nd to 99°, rose the same evening to 103·4°, and next morning was only 100°, so that there were marked fluctuations in its curves. The patient was ordered Pulv. digitalis 1 grain, pulv. scillæ 2 grains, pil. hydrarg. ad. 5 grains, three times a day, and to have linseed poultices to the right chest. Dyspnœa, however, was not relieved, and the general condition went from bad to worse. On the evening of the 24th the temperature was only 98°, it having sunk more than five degrees in forty-eight hours. It rose to 102° by the night of the 27th, but next morning (Feb. 28) was only 98°. Another exacerbation followed, and in twelve hours the temperature ran up four and a half degrees.

Temperature was thus suggestive of some suppurative process; and on March 2, the patient's condition being distressing and dangerous, a trocar was passed through the right ninth space behind the posterior axillary line, where distinct bulging seemed to indicate pointing of the empyema; but only about two ounces of pus mixed with blood were brought away. Ammonia and bark were prescribed and absolute rest enjoined. On Sunday, two days afterwards, the patient, who had been to a certain extent relieved by operation, got worse; and a free incision was made in the eighth space in the mid-axillary line, and a probe passed in the direction of the opening in the ninth space, with the object of breaking down adhesions, which seemed to prevent the escape of purulent fluid. The two openings were easily connected, and about a pint of thick and offensive fluid evacuated. Immediately after the operation the breathing became short and full of distress, and so threatening as to forbid further operative measures and even physical examination. The man rallied in a while, and a piece of catheter was passed, in the hope of evacuating the pleural cavity. He was put on brandy and strong beef-tea, and next day complained of less discomfort. However, he passed a bad night, and died on the Tuesday morning, his condition prior to death precluding a pursuance of such surgical proceedings as prove useful under more favourable circumstances.

The post-mortem examination was made by me about twenty-four hours after death. There was an absolute hard dulness on percussion over the right front up to the clavicle, and running on the left into the cardiac dulness, which was transverse instead of vertical, with its upper level on the third interspace. The right side was universally prominent and its interspaces were distended. A wound was found in the ninth right space immediately above the tenth rib, a little behind the posterior axillary line, and from this opening pus was escaping. Two inches in front of it was an opening in the eighth space just below the seventh rib. Through these openings the little finger could be passed. On section of the right costal cartilages stained serous fluid flowed, and when the sternum was removed distinctly empyemic fluid—whitish-yellow, thick, and more or less sanious. The right lung lay against the spine and could scarcely be seen, and was coated with matted lymph and completely collapsed. Its base was firmly adherent to the diaphragm. The heart was displaced to the left, and twisted so that its apex was in the left axilla. The position of the liver was peculiar; the left lobe was mainly under the sternum, its extremity being as high as the third left cartilage, and lying under the heart. The diaphragm was adherent to this lobe. The liver generally was twisted so strangely that the gall-bladder was in contact throughout with the walls of the abdomen; its right lobe was large, and rounded into the shape of a fœtal head—into a globular mass, on which in no groove was found an empty gall-bladder. The left lobe was well-defined, with a thin edge; but springing from its upturned under surface was an accessory lobe in the right epigastrium, quite moveable and superficial, of the size and shape of a kidney. The liver thus occupied a diagonal instead of a transverse position, from the right hypochondrium upwards to the third left cartilage.

On examining the wounds before the removal of the liver, it was found that the finger when passed through the posterior one went below the diaphragm into the cavity of an abscess of the liver. The diaphragm was bound by a firm adhesion, much resembling itself to the chest-wall above the anterior opening, so that at first it seemed as if this opening also passed directly into the abdomen. This it had not done; the perforation was into the pleural cavity, and thence through the diaphragm to meet the posterior wound in the hepatic abscess, which was quite superficial, and the source

of the 'pointing' in the ninth space. The course of the catheter introduced was, therefore, through eighth space, pleural cavity, adherent diaphragm, hepatic abscess, and ninth space. The hepatic abscess was as large as an orange, and in the posterior part of the right lobe. It was distinctly circumscribed except where in contact with the parietes by a wall half an inch thick, firm, and whitish-yellow in look, cutting like solid fat. Its inner aspect was rough and uneven, resembling the granular surface of an extensive skin-ulcer, and no trace of anything hydatid could be found. There was no evidence of recent extension of this abscess from the empyema. The liver itself was irregular on section. Here and there were patches of marked nutmeg character, in other places patches, either uniform or not, which were whitish-yellow, soft, and fragile. Especially these whitish bloodless patches prevailed near the walls of the abscess. The appearances were those of an acute hepatitis. The kidneys and spleen were normal. The right heart was dilated, the left auricle small, but the left ventricle somewhat hypertrophied. There was a cicatrix on the prepuce.

Possibly the order of events had been dysentery, with secondary abscess of the liver, which had remained latent for many years, and finally pleurisy and empyema. It does not seem unlikely that an insidious pleurisy may have extended from the abscess through the diaphragm, and this view is supported by the old adhesions between the different organs. The pleurisy may have from time to time been recovered from, but a tendency to its recurrence in marked degree remain. It is difficult, however, to trace to the pleurisy the renewed activity of hepatic changes, which were visible, not only in the abscess, but in the whole liver.* It is clear also that possibly the abdominal and thoracic changes were independent of one another, though each had a share in bringing about the clinical phenomena and the post-mortem appearances. These appearances at any rate, and especially the position of the liver, suggest chronicity of all the morbid processes met with.

The position of the liver and the abscess found in it yield points of the greatest clinical interest. No writers make mention, as far as I can find, of the possibility of the liver in cases of decided empyema being drawn high into the

* Tropical abscess may be latent for years, be quiescent, and then develop itself with most marked symptoms. Possibly, also, dysentery is not the cause but the effect of abscess in liver.

chest though extending below the margin of the ribs. Frerichs says that because of its ligamentary suspension the right lobe of the liver descends in right pleurisy rather than the left, which, indeed, usually rises. In this case, while the left lobe was higher than the right, both were far higher than generally happens in empyema; and the whole liver was so curiously twisted and misshapen that the gall-bladder was completely anterior and in contact throughout with the wall of the abdomen. These unusual changes were most likely the results of insidious processes acting off and on for years before the final illness. Many factors were probably at work in causing the hepatic displacement. In the first place, the abscess with the surrounding hepatitis, which had not proceeded to abscess, must have changed the shape of the liver; then adhesion must have aided in twisting it on its axis, and the pleuritic fluid must have exercised great influence. It seems likely that a varying amount of fluid in the thorax may have had much to do with the undue elevation of the liver, because adhesions would gradually increase, and when the amount of fluid at times diminished, and the lung gradually became less able to expand, there would be a growing but varying infrathoracic pressure, capable of greatly altering the position of the liver. In consequence of adhesions, also, the collapsing lung must have exercised considerable traction on the left lobe of the liver.

It is difficult to conceive how the exact condition of things could be diagnosed in such a case, and the mistake of puncturing too low avoided. No one would have hesitated to decide that the 'pointing' in the ninth space was empyemic, and yet the trocar introduced there went below the diaphragm; nor would anyone have expected, with the physical signs given, that an incision made into the eighth space, near the mid-axillary line, would have met superficially with diaphragm and liver. The lung note on the left side extended far lower than the space in which exploration was first made on the right side, with the result of proving the presence of purulent fluids. Had there been no abscess of liver exploratory puncture would certainly have led to the suspicion of undue elevation of this organ.

All the usual diagnostic signs of abnormal elevation of liver failed. The latter was percussed and found low in the abdomen, and *post mortem* it extended at least three inches below the margin of the ribs, and yet in the mid-axillary line was higher superficially than the eighth space;

and to the left of this, as high as the fifth rib, though the right pleura was full of sero-purulent matters. The diminished resistance at the margin of the ribs, palpable in uncomplicated pleurisy where fluid ends and liver begins, existed here, because of the peculiar shape of the liver, while the lower edge of the liver could not be felt, because the organ was so strangely rounded that no edge was left. The intercostal spaces on the right side bulged, and the greatest bulging was in the ninth space below the angle of the scapula, and pointing of an empyema was naturally suspected, though as it turned out this was due to an abscess of the liver. The kind of dulness failed to a certain extent diagnostically. Its absolute character and extent undoubtedly indicated fluid in the pleural cavity, but did not indicate co-existing changes in liver. No exact note was recorded of the level where breath-sounds, vocal fremitus and vocal resonance disappeared below; but in empyema of great extent one would expect these to cease far above the line of the upper border of the liver. Nor was change in position of organs during inspiration of any value, for no respiratory lung was left on the right side; and on post-mortem the right half of the diaphragm was found almost immoveable from adhesions, so that no material change could have occurred on this side with respiration. The absence of movement was not due to permanent extension of the thorax, because the liver was not really depressed, nor to loss of contractile power in the diaphragm, which, as Frerichs has shown, sometimes occurs in the case of liver tumours followed by fibrous or fatty degeneration of diaphragm.

There was positively no sign diagnostic of where effusion ended and liver began, and the case is therefore of clinical importance, especially in regard to the operation of paracentesis thoracis. I do not venture to discuss in detail the surgical bearings of the case; but as physicians are asked where an empyema ends and liver begins, every possible source of error should be recorded. This case illustrates one source of great rarity. It is, no doubt, true that in tapping the pleural cavity it is often of little moment whether lung, liver, or other neighbouring organ be wounded, but it is certainly desirable to avoid such woundings; in short, to make the operation perfect, by limiting it to the object in view. In the case narrated the first operative procedure was doubtless of benefit by drawing off the contents of the hepatic abscess, to whose renewed activity after years of latency

many of the later symptoms were, perhaps, due—such symptoms as the irregular rises in temperature and the pains in the right side. At the same time it is clear that could any method of diagnosis have determined the co-existence of abscess of liver and of empyema, no attempt would have been made to connect the incision in the eighth space with that made in the ninth space. In this attempt the diaphragm was perforated, if such perforation had not, as is not unlikely, previously occurred as a result of the hepatic mischief. Yet it is certain from post-mortem examination that operative measures had no bad results; and though it was not possible to diagnose the exact conditions, active interference was justifiable, the existence of empyema being beyond question. Surgical treatment was pursued as far as the man's state allowed; his state would not permit free exploration of the pleuritic cavity or attempts to break down possible adhesions for the relief of the pent-up fluids. The case shows that where patients can bear these measures after failure of simple procedure, it is better to err on the side of too much surgical interference than of too little. It is plain that the co-existence of obscure hepatic abscess and marked empyema made exact diagnosis difficult, and, what is more important, treatment less effective than it might otherwise have been.

XL.—*On a Case of Taliacotian Rhinoplasty.* By William MacCormac. *Read May* 11, 1877.

S. J. W., a perfectly healthy girl, sixteen years of age, was admitted under my care into St. Thomas's Hospital, last December, suffering from partial loss of the nose, and cicatricial deformity of the face, the result of accident. The appearances presented before operation are seen in the cut, copied from a photograph, Fig. 1. There is complete loss of the tip of the nose, and of both alæ, notably the right, and a vertical cicatrix, with considerable loss of substance, on the right side of the upper lip; there is also much cicatricial scarring on the bridge of the nose.

The history of the accident is an interesting one, and I have been fortunate in obtaining it from the medical prac-

titioner under whose care the child was immediately after birth. 'A nævus,' he says, 'was observed situated over the root of the nose, where the nasal bones join the frontal. The nævus was about the area of a shilling, and caused considerable disfigurement. In consequence of the deformity, and the probable increase of the tumour, I injected into it a small quantity of the liquor of the pernitrate of iron of the Pharmacopœia. The operation was performed when the infant was but two months old. No suspicion of any

Fig. 1.

Fig. 2.

dangerous consequence was entertained, and therefore no little surprise experienced at suddenly seeing the rosy skin of the nose, natural to a child at that age, suddenly become quite pallid. After this the nævus was cured, but the skin, &c., &c., of the nose sloughed, and left the existing deformity. The loss of substance and cicatrix in the upper lip were also the consequence of the sloughing action.'

The girl came up to London from the country, and was most anxious for an operation. I determined to attempt the old method of Taliacozzi, rather than the Indian method, by which a considerable frontal scar is of necessity left. I preferred the Italian method, too, after much consideration, to

making any effort to supply the missing portion of the nose from the cheeks.

As I have been unable to find any details of previous similar operations, because I assume the operation has of late years been very rarely performed, and because I am able to present to the Society the result in the patient herself, I thought an account of this case would not prove uninteresting.

The first, and as I think, the most important thing to do, is to provide means whereby, with a minimum of inconvenience, the patient's arm may be kept in the needful position for the requisite period. Much time and trouble (for which I thank them) were taken in this matter by the instrument-makers, Messrs. Krohne, and the result was completely successful. The apparatus resembles, but with some modifications, that figured by Taliacozzi himself.

Fig. 2, copied from a photograph, shows the instrument as applied. A pair of ordinary stout, well-fitting stays were first procured, to which were attached two perinæal straps, to prevent displacement upwards. A helmet, partly made of leather, was connected with the stays by a leather band running up the centre of the neck and back. A leather arm-piece, strengthened by a steel band, was moulded so as to extend from the wrist to the shoulder, where it was buckled to the stays. The wrist and hand were fastened to the helmet by a gauntlet, while the elbow could be fixed steadily in any required position by straps running from it to the stays, and to the sides of the head-piece, so that there was nowhere any undue strain, the pressure being so evenly distributed that each strap was almost slack. This apparatus was kept applied for some days beforehand, so that any point of undue pressure might be discovered and remedied. The girl was able to sleep soundly in it, and it gave promise of proving perfectly efficient.

Meanwhile I modelled on the deficient nose a gutta-percha substitute, and from this was able to project on a flat surface the extent of the deficiency.

The first part of the operation was performed on Feb. 12, 1877. A flap was mapped out on the inner aspect of the left upper arm, more than double the actual size of the estimated deficiency. The left arm was the one chosen to supply the flap, and the right side of the nose the one first operated upon, the septum being fashioned at the same time. The flap was left attached at the upper part to the arm by a

broad, long pedicle, and so arranged that there should be no traction whatever upon it, whilst the raw surface from which it was taken should be accessible for daily dressing. With the flap I dissected up the subcutaneous fat down to the muscular sheath. Immediate retraction both of the flap and of the denuded part of the arm took place to a large extent, so that the raw surface on the latter was almost co-extensive with the whole inner aspect of the girl's arm, the flap appearing quite small in comparison.

I now made a slightly curved incision nearly parallel to the free border of the nose on the right side, and about three lines above it, corresponding, in fact, to where the alar furrow should normally exist.

This incision was prolonged some little distance into the cheek in the line of the cheek furrow, whilst the remains of the septum were split open in the median line. This nasal flap could now be turned down so as to become horizontal, or rather a little depressed beneath the horizontal line, to allow for retraction of the ingrafted piece. A triangular gap, the apex pointing towards the cheek, was thus left exposed on the right lateral aspect of the nose, and into this the triangular-shaped piece from the arm was inserted, and accurately attached by suture; the portion to form the septum being sutured in the groove already mentioned formed by splitting the septum.

In this way there was no paring of edges, nor was a single particle of the nose-tissue sacrificed; whilst by having so large a line of attachment, being almost surrounded by living tissue, the new flap was much more likely to adhere satisfactorily in the first instance, and from its freer blood-supply less prone perhaps to subsequent contraction.

Union of the edges of the skin took place in great part by first intention; but on the eighth day some suppuration set in nearly all round the flap, due, I suppose, to the indifferent plastic power of the subcutaneous fatty tissue. Absolutely complete healing of the deeper portion of the flap did not take place for nearly three weeks.

After an interval of twenty-one days the operation was completed by detaching the base of the flap from the arm, cutting it so as to give it a triangular shape, and preparing the left side of the nose to receive it in a manner precisely similar to the right. In the gap thus formed the detached portion was then adjusted and sutured.

The perfect vitality of the now completely severed tissue

of the arm was apparent by the furious manner in which it bled—more copiously, in fact, than did the wound made in the cheek or nose. Complete healing of the parts after this second part of the operation took place in a fortnight.

The arm when taken out of the apparatus was stiff and painful, but soon recovered itself. The dressings both of the wound on the arm and of the nose were throughout of lint soaked in olive-oil.

No interruption to the healing process took place beyond that already mentioned.

After the first forty-eight hours scarcely any inconvenience was felt from the apparatus, and the girl never complained at all, except from a slight excoriation on one shoulder, which healed at once when it was discovered and dressed.

She generally slept quite well, moved and sat up freely in bed, and indeed could have got up and walked about towards the latter part of her three weeks' durance had she been so disposed.

It did not appear to me essential after fourteen days to maintain the vascular connection with the arm any longer; nevertheless, as the apparatus was causing no inconvenience, and the patient expressed her perfect willingness, I kept it on a week longer before dividing the connection, which allowed every portion of the wound to cicatrise soundly.

During the first fortnight or three weeks after the completion of the second operation considerable contraction took place in the new nose. Fig. 3, copied from a photograph, shows the condition four weeks after the second operation.

Since then very little further change has ensued. It is now twelve weeks since the first and nine since the second operation at the date of this communication, May 11.

The wound in the arm is not yet wholly cicatrised; but no inconvenience is likely to result from this.

The nostrils have been kept dilated by short pieces of india-rubber tubing, which have answered their purpose admirably.

In a year or so, when all possible contraction shall have come to an end, I may be able to present the girl again to the Society, or, in any case, a report of her condition.

On the probable amount of the contraction the interest of the case largely hinges. Dieffenbach thought the degree of atrophy greater in flaps derived from such a source

than in those from the forehead. It appears to me, however, that the large basis of blood-supply possessed by the transposed tissue in this case is to a great extent a safeguard against any excessive contraction; and for this reason, I think, as well as because it saves and makes available every scrap of existing tissue, the plan which I adopted of splitting the nose, as it were, is of practical importance. It served also the purpose of ensuring much more perfect nostrils.

From the experience afforded by the case I should conclude that a future operation of this kind might possibly

Fig. 3.

be safely completed in a somewhat shorter time, say fourteen days, and that if care be expended in providing a well-fitting apparatus no great inconvenience will be felt by the patient.

A secondary but not unimportant consideration is the absence of that hairy growth which is so unpleasant if any portion of the hairy scalp be used for the formation of the nose. The new portion had at first a very blanched appearance, which it is gradually losing.

I still expect that further contraction will much improve the aspect of the nose. Possibly some little plastic operation may still be required. The result as it stands is, I submit, a very decided improvement upon the girl's previous

unsightly appearance, and the patient herself is much gratified.

I trust at a future time to be permitted to present to the Society a report of the ultimate result.

XLI.—*Report of a Case of Enteric Fever Treated with Salicylate of Soda.* By C. MURCHISON, M.D., F.R.S. *Read May* 25, 1877.

GEORGE W., labourer, æt. 20, admitted into St. Thomas's Hospital January 5, 1877. He was a well-nourished lad, and had always enjoyed excellent health, as far as he could remember, until his present illness, which had commenced eighteen days before admission. It had come on gradually with chilliness, headache, loss of appetite, and prostration, but he had not taken to bed until a week after the commencement of the symptoms. On several occasions he had vomited, but there had been no diarrhœa. Once his nose had bled to the extent of about an ounce. The headache had persisted, though in a less severe form than at first; there had also been sleeplessness, but no delirium. His other symptoms had been great thirst, occasionally rather copious perspiration, and slight cough. He had had no medical treatment.

State on Admission.—Expression somewhat heavy and pupils dilated. Considerable frontal headache, which had prevented sleep the night before; but no delirium and mind clear. Tongue coated white, and red and dry down centre; no appetite; great thirst; bowels act once or twice daily. Abdomen slightly distended, nowhere tender; spleen slightly enlarged. About half a dozen rose spots scattered over abdomen and flanks. Skin perspiring freely; temp. at 1.30 P.M. 102·5°; pulse 100, irregular; sounds of heart normal. Slight cough; respiration 26; a few dry râles over front and back of lungs.

After admission the temperature gradually rose; at 8.15 P.M. it was 104·8°, at 9.30 P.M. 104°, and at 10 P.M. 104·4°. He was now ordered the salicylate of soda, 20 grains every two hours, which after the second dose was increased (at 2 A.M.) to 30 grains every two hours. He took the first dose at 10 P.M. At midnight the temperature had risen to 105·6°, but by 2 A.M. of Jan. 6 it had fallen to 102°, and by

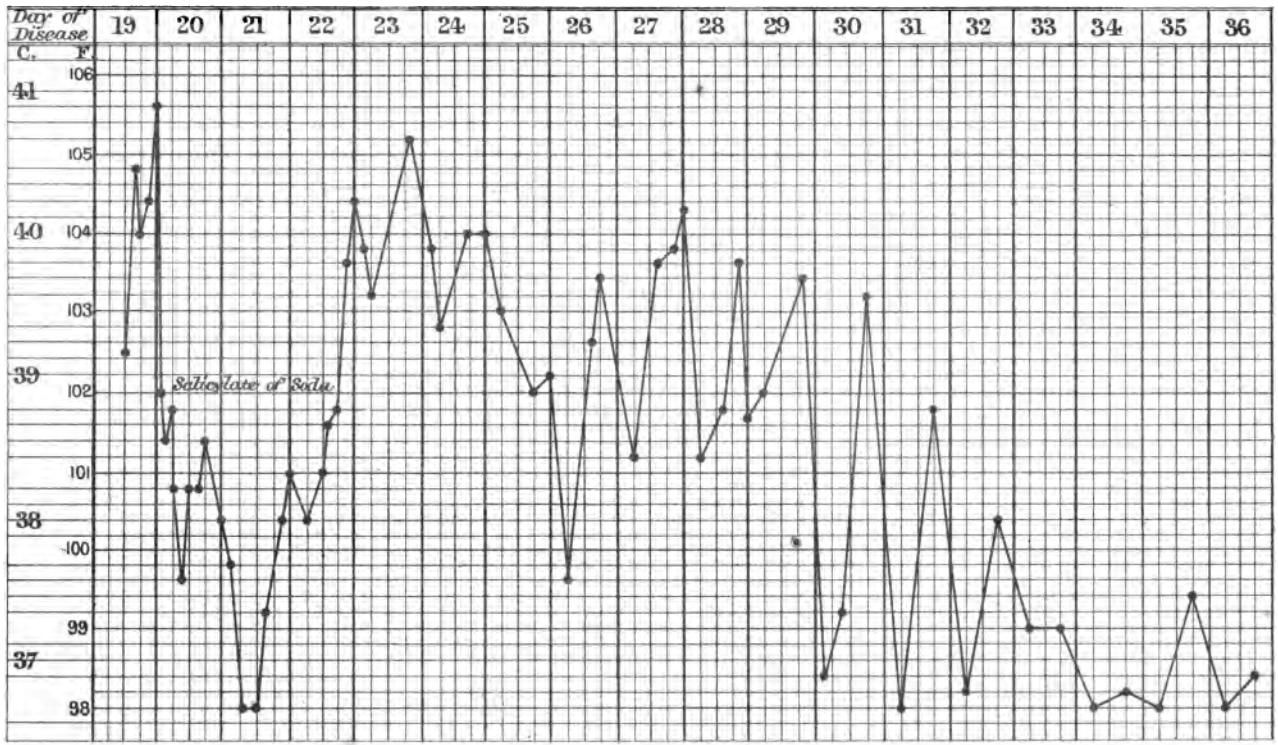
10 A.M. it was only 99·6°. (See Table.) At noon, having taken eight doses of the medicine and being somewhat deaf, the salicylate of soda was ordered to be taken only once in four hours. During the whole of January 6 the temperature never exceeded 101·2°. There was nothing very notable in the patient's condition, but on the whole he felt better. The bowels acted three times. At midnight he took the eleventh dose of the medicine.

On January 7, at 4 A.M., he took the twelfth dose. His temperature was now only 99·8°; his feet felt very cold, and warm bottles were applied to them. Shortly afterwards he said that he felt 'muddled in the head;' he called for his clothes, and tried to get out of bed. At 8 A.M., his temperature being only 98°, he took the last dose of the medicine. About an hour afterwards he vomited. During the whole of Jan. 7 the temperature never exceeded 100·4°. About noon he was observed to be delirious. He could not answer intelligently, and kept trying to get out of bed. During the afternoon he had noisy delirium at times, with intervals of quiet, and at 7 P.M. he became very violent, and kept constantly shouting 'Murder!' and insisting that he was going to have his throat cut. He was removed at 10.30 P.M. to a small ward, and for a short time he was quieter; but at 11.30 P.M. he broke out suddenly, knocked down the porter in attendance, and was found under his bed, trying to lift it up with his back. It required two porters to keep him in bed. At 8 P.M., having passed no water for twenty-four hours, a catheter was introduced, but only a few ounces could be obtained; this contained one-fourth (in volume) of albumen, with some granular epithelial casts and salicylic acid. At midnight he was sleeping soundly and perspiring profusely.

He continued to sleep soundly, except for about five minutes, when he was again noisy, and at 9.30 A.M. next morning (Jan. 8) he was quite rational and free from pain. Temp. 100·4°. Tongue brown and dry; no action of bowels, and urine still scanty. Towards evening the temperature rose again; at 7.30 P.M. it was 103·6°, and at midnight 104·4°.

Jan. 9, 9.30 A.M.—Feels much better; no headache nor deafness; slight giddiness; mind clear; slept fairly. Tongue dry and brown in centre, moist and white at edges; one slight motion; only 7 ounces of urine in twenty-four hours. Copious eruption of sudamina; no rose-spots.

Name, George W..... Age, 20. Disease, Enteric Fever. Date of Attack, Dec. 18th 1876.



7.30 P.M.—Temp. 105·2°. Slight nausea. Passed 25 oz. of urine in last ten hours. Urine was examined three times. On the first occasion it contained a trace of albumen, but none on the other two; on all three occasions it was found to contain salicylic acid.

10.—Pulse 84; temperature varied from 102·8° to 104°. Slight cough, with some moist sounds at bases of lungs. Three motions and one pint of urine in night. Urine still contained salicylic acid, and again a trace of albumen.

11.—Pulse 84; temperature 102° to 103°. Tongue still dry and brown down centre; four motions; urine 1025; still contained a trace of albumen but no salicylic acid.

13.—Pulse 72; temperature 101·2° to 104 3°. Tongue

Table of Temperatures in George W.

Day of Illness.	Date.	Time.	Temp.	Remarks.
			°	
19	Jan. 5	1.30 P.M.	102·5	Admitted into hospital.
		8.15 „	104·8	
		9.30 „	104·0	
		10.0 „	104·4	Salicylate of soda, 20 gr.
		12.0 MID.	105·6	Do. do.
20	„ 6	2.0 A.M.	102·0	Do. 30 gr.
		4.0 „	101·4	Do. do.
		6.0 „	101·8	Do. do.
		8.0 „	100·8	Do. do.
		10.0 „	99·6	Do. do.
		12.0 NOON.	100·8	Do. do. 220 grains.
		4.0 P.M.	100·3	Do. do.
		8.0 „	101·2	Do. do.
		12.0 MID.	100·4	Do. do. "Muddled."
21	„ 7	4.0 A.M.	99·8	Do. do. 340 grains.
		8.0 „	98·0	Do. do. 370 „
		12.0 NOON.	98·0	Delirium set in.
		4.0 P.M.	99·2	
		9.0 „	100·4	7 P.M. to 11.30 P.M. very violent delirium. Almost suppression of urine and albuminuria. Salicylic acid in urine.
		12.0 MID.	101·0	Sleeping soundly, and profuse perspiration.
22	„ 8	9.30 A.M.	100·4	
		12.0 NOON.	101·0	Mind clear.
		1.30 P.M.	101·6	
		3.0 „	101·8	
		7.30 „	103·6	Pyrexia returned.
		12.0 MID.	104·4	
23	„ 9	4.0 A.M.	103·8	
		8.0 „	103·2	
		7.30 P.M.	105·2	
24	„ 10	1.30 A.M.	103·8	
		8.30 P.M.	102·8	
		8.0 „	104·0	

Table of Temperatures in George W.—(*continued*).

Day of Illness.	Date.	Time.	Temp.	Remarks.
			°	
24	Jan. 10	12.0 MID.	104·0	
25	,, 11	8.0 A.M.	103·0	Salicylic acid disappeared from urine.
		8.0 P.M.	102·0	Still a trace of albumen.
		12.0 MID.	102·2	
26	,, 12	9.30 A.M.	99·6	
		3.45 P.M.	102·6	
		8.0 ,,	103·4	
		12.0 MID.	101·8	
27	,, 13	9.0 A.M.	101·2	Albuminuria disappeared.
		3.0 P.M.	103·6	
		7.30 ,,	103·8	
		12.0 MID.	104·3	
28	,, 14	9.45 A.M.	101·2	
		3.30 P.M.	101·8	
		9.0 ,,	103·6	
		12.0 MID.	101·7	
29	,, 15	8.0 A.M.	102·0	
		8.0 P.M.	103·4	
30	,, 16	8.0 A.M.	98·4	
		11.0 ,,	99·2	
		8.0 P.M.	103·2	
31	,, 17	8.0 A.M.	98·0	
		8.0 P.M.	101·8	
32	,, 18	8.0 A.M.	98·1	
		8.0 P.M.	100·4	
33	,, 19	8.0 A.M.	99·0	
		8.0 P.M.	99·0	
34	,, 20	8.0 A.M.	98·0	
		8.0 P.M.	98·2	
35	,, 21	8.0 A.M.	98·0	
		8.0 P.M.	99·4	
36	,, 22	8.0 A.M.	98·0	
		8.0 P.M.	98·4	
37	,, 23	8.0 P.M.	97·7	
38	,, 24	8.0 A.M.	98·0	
		8.0 P.M.	98·2	
39	,, 25	8.0 A.M.	97·8	
		8.0 P.M.	98·0	
40	,, 26	8.0 A.M.	97·6	
		8.0 P.M.	98·0	
41	,, 27	8.0 A.M.	97·6	
		8.0 P.M.	97·6	
42	,, 28	8.0 A.M.	97·4	
		8.0 P.M.	97·5	
43	,, 29	8.0 A.M.	97·2	
		8.0 P.M.	97·6	
44	,, 30	8.0 A.M.	97·4	
		8.0 P.M.	97·0	
45	,, 31	8.0 A.M.	97·4	
		8.0 P.M.	98·0	
46	Feb. 1	8.0 A.M.	98·0	
		8.0 P.M.	98·8	

covered with a dry brown crust; six or seven motions. Complains of some uneasiness in head, but mind clear. Urine free from both albumen and salicylic acid, but deposits copious lithates. He was ordered a mixture containing hydrochloric acid and a few drops of laudanum.

After this the patient continued to improve; the diarrhœa abated. On Jan. 19 (thirty-third day) the evening temperature was normal, and on the following day the tongue was moist and clean, and the pulse only 54. He was now ordered quinine and mineral acid, and he required repeated doses of castor-oil to keep his bowels open. On the 24th he became very hungry. On the 27th he was allowed fish, and on Feb. 1 meat. On Feb. 10 he was ordered quinine and iron, and on the 15th he left the hospital.

Remarks.—1. The foregoing case was particularly favourable for testing the effect of salicylate of soda upon enteric fever, inasmuch as the attack was characterised by considerable elevation of temperature, but was unattended by diarrhœa, delirium, or any complication.

2. The effect of the drug was to reduce the temperature as notably and rapidly as in rheumatic fever; but when the drug was discontinued the pyrexia returned, and the subsequent progress of the case was such as might have been expected had it not been employed.

3. Another effect of the drug was to induce violent delirium. There was no delirium until the patient was brought under the influence of the drug, and the delirium ceased as the pyrexia returned and the effect of the drug passed off.

4. A third effect of the drug was to cause albuminuria and almost suppression of urine. The urine, unfortunately, was not examined for albumen before the commencement of the salicylate of soda, but the fact of the albuminuria disappearing as the effect of the drug passed off, although the pyrexia returned, together with the great diminution of urine and the circumstance which I have repeatedly noticed, that temporary albuminuria often occurs in acute rheumatism while the patient is under the influence of salicylate of soda, leaves little doubt that the albuminuria was the result of the drug.

5. The circumstances now mentioned make it probable that the cerebral symptoms were due to the suppressed elimination by the kidneys of the nitrogenous detritus of the blood and tissues.

6. In reference to the statement that the cerebral

symptoms occasionally produced by salicylate of soda are due to its containing carbolic acid, it may be mentioned that a sample of the salicylate of soda employed in this case was submitted to Dr. Bernays, whose report was that it contained a trace of carbolic acid, but so minute that the quantity could not be estimated.

XLII.—*On some Cases of Misplaced Testes.* By Edmund Owen. *Communicated by* Thomas Smith. *Read May 25, 1877.*

Case I.

CONCERNING the case of the infant which has been before the Society this evening, whose right testis has wandered into the perinæum, there is little for special remark in a practical society such as this, unless it be on the subject of treatment.

I confess that no operative interference seems to me advisable. There is nothing to show that a gland which has so wandered is not eventually to become a useful organ; whilst if it is to be for ever useless it may as well be left in peace. I cannot think that an attempt to change its position an inch or so to the front would be attended with signal advantage.

The ischial tuberosities will eventually be able to protect it from pressure when the patient is in the sitting posture. Horse-exercise will be precluded if the gland be allowed to remain where the forces of development have placed it. But if hereafter its pressure be found absolutely undesirable the propriety of ablation may be considered.

Why an accidental displacement should, however, so frequently determine a uselessness of the gland is not clear. Certainly there seems to be no cause sufficient to interfere seriously with the proper nutrition.

Case II.

In the early part of last Winter Session a well-developed male subject was admitted to the dissecting-room of St. Mary's Hospital. He was supposed to be 48 years of age. His face was large and feminine, and almost destitute of

hair. His limbs and trunk were thickly encased in fat, but his muscles were well-nourished, and, for a dissecting-room subject, far above the average.

The external organs of generation would best be characterised as 'early puerile,' and on careful examination no testes could be detected either in the scrotum or in the inguinal regions. There was a small mountain of fat over the pubes. The pubic hair was scant and thready.

Little could be ascertained of the habits of the man. He had never been married, and used to sleep in common lodging-houses. He went by the sobriquet of 'the Eunuch;' and his male and female friends were in the habit of examining his parts from time to time, and, having gratified a prurient curiosity, to express contempt which was as marked as it was ungenerous.

His voice is said to have been childish.

On dissection the testes were discovered lying just outside the external abdominal rings. They were small, shapeless, and flabby, whilst their whole or chief substance was taken up by yellow fat. Long and slender vasa deferentia connected them with the common ejaculatory ducts. The seminal vesicles and the prostate were in a state of most imperfect development—a noteworthy feature in the case. The bladder was of ordinary size.

The account of this dissection is of considerable value, inasmuch as it supports the inference drawn by John Hunter, that the seminal vesicles do not depend upon the testes for their secretion, but upon the constitution, and on the person being capable of the act of generation. Hunter found that after the removal of one testis both seminal vesicles remained unimpaired. He was of opinion that the penis, urethra, and all the parts connected with them were so far subservient to the testes that few of them would have existed if there had been no testes in the original construction of the body. He also believed that when one or both testes remained through life in the abdomen they were exceedingly imperfect, and probably incapable of performing their natural functions, and that this imperfection prevented the disposition for descent from taking place. But Hunter admitted that he had seen only one case in the human subject where both testes continued in the abdomen; and this proved an exception to the above observation, since we are led to conclude that they were perfectly formed, as the person had all the powers and passions of a man.

In the fourth volume of Palmer's edition of 'Hunter's Works' the compiler steps down to express in a foot-note his surprise that the great physiologist should have formed, from inconclusive analogy, and promulgated an opinion tending to occasion so much unhappiness as that which attributes probable incapacity to testes which in the human subject are retained within the abdomen. (Hunter does not appear to have had subsequently the opportunity of dissecting this subject.)

Passing on to Sir Astley Cooper, we read that when the testes remain in the abdomen it makes a strong impression upon the patient's mind, as a suspicion arises that his virility is lessened or destroyed; and that in a case of this kind Sir Astley had known the unfortunate subject of it commit suicide. Yet the testes in this case were nearly of the same size as healthy testes, and the tubes were full of what Sir Astley took to be semen. It is unfortunate that we are not told more of the physical condition and surroundings of this man, who considered his case to be so desperately bad as to justify his putting an end to his miserable existence.

In 1843 Mr. Poland occupies four lines in the 'Guy's Hospital Reports' with the brief history of a young man whose testes had never descended. There was no appearance of scrotum, but the penis was well-developed, and the patient had all the other signs of virility. He married when he was twenty; had two children by his first wife, and was then married to his second wife.

Mr. Curling, on the other hand, expresses his conviction that a testicle detained fails to secrete a fertilising fluid, and that a male with this defect on both sides, though often potent for sexual intercourse, is incapable of impregnating the female. He also quotes M. Godard's opinion, which is to the same effect. M. Godard knew of three cryptorchid married men who had no children, and he affirmed that such persons were always sterile.

Dr. Marshall, in the examination of nearly 111,000 recruits, met with only one case in which both testicles had not descended; but one would hardly expect to find many cryptorchids seeking a soldier's life.

That developmental imperfection is more frequently the cause than the result of incomplete descent of the testes I am inclined to believe. In the dissection which is now before the Society the descent is not prevented by a short-

ness of the vasa deferentia, nor by any imperfection in the inguinal canal, nor by a smallness of the external abdominal ring, for the vasa are of ample length, whilst the testes have passed out of the ring and rest upon the pubes. It may be that the hidden forces which we know as Nature, finding the glands undeveloped or degenerate, refused to bring such useless structures to their otherwise natural situation in the scrotum.

Here it may be interesting to turn aside for a moment to compare the effect of castration on the growing male with the condition existing in the subject from which this dissection has been prepared. Professor Allen Thomson remarks that when castration is performed at an early age the functional and structural peculiarities of the body become less marked, and there is a general deposition of fat in the different textures, and the voice remains high and clear. In the term 'structural peculiarities' I imagine that he includes the condition of the seminal vesicles, the prostate, and penis.

The late Mr. Coulson, speaking at a meeting of the Medico-Chirurgical Society, in 1859, said that he had been consulted in a case in which neither testis had descended into the scrotum; that this gentleman married, and was able to perform his marital duties. He said nothing (as I gather from the 'Lancet' report of the meeting) of the result of the marriage; but he was of opinion that non-descent of both testes should be no impediment to marriage.

It seems to me that cryptorchids might be arranged with advantage in three classes. In the first might be placed those who have neither the desire nor the power of sexual intercourse, but resemble those lower animals who have been castrated before development had far advanced.

The next class would comprise those who have the desire, and that, maybe, in a marked degree, but whose power of fertilisation fails on account of the absence of seminal filaments. Such men would resemble many eunuchs and animals which have been emasculated when development was far advanced or, possibly, perfected.

In the last class would be found those cryptorchids who not only have the desire of healthy men, but whose semen is not destitute of spermatozoa—men who are apt to lead a miserable existence, because they have been led to believe that because their testes have not reached the scrotum they are useless. With however much suspicion we may

regard the paternity of children born to such men, it can hardly be denied that they may have the power of fertilisation in addition to that of intromission.

But if the subject be fat and sleek, has a puerile or harsh voice, a small penis, and much adipose tissue heaped up over the symphisis, a scanty amount of silken hair on the pubes, and little or none on the face, then a fruitless search in the field of the microscope would scarcely be necessary to make us assured of his impotency.

XLIII.—*Case of Undescribed Eruption occurring in a Tuberculous Child.* By Thomas Barlow, M.D. *Read May* 25, 1877.

CAROLINE T., a little girl, was brought as an out-patient to the Children's Hospital, Great Ormond Street, about twelve months ago, under the care of my colleague, Dr. R. J. Lee. He was kind enough to let me see the case and afterwards transfer her to me, and for twelve months she has been, with some intervals, under the observation of either one or other of us. The mother's statement about the child was that she noticed nothing wrong with her till she was three or four months old; then she saw some round brown patches on the child's chest, which she at first attributed to a blow or a pinch. These patches increased in size and extent till the child was twelve months old, but have not altered much since then.

The child was brought to Great Ormond Street when she was thirteen months old. There was nothing remarkable about her then except her skin.

Over the front and back of the chest and belly, and over the front and back of the arms, forearms, thighs, and legs there were numerous pigmented patches; they were very slightly raised, varied in size from the area of a pea to that of a shilling, and were of a uniform brownish colour, with a dash of olive in it—not unlike the colour of chloasma, but darker.

It is important to observe that the face, hands, and feet are free from this eruption, and that the child has not at any time had jaundice. These patches have not altered; the child now, as far as this condition is concerned, is almost

identically what she was twelve months ago. So far her skin lesion is very similar to Dr. Tilbury Fox's case, described in the Clinical Society's 'Transactions' for 1873 as xanthelasmoidea, and to Mr. Morrant Baker's case, designated as an undescribed eruption, in the same volume.

But there are some other conditions in this child which deserve record. The mother states that from the earliest time the child has been subject to 'fleabites.' On several occasions I remember to have seen reddish rounded patches, with a thin white streak, somewhat like a 'wheal.' I have never seen a true fleabite. However, a scratch will, after about five minutes, bring out a *bonâ fide* 'wheal;' sometimes simply handling the child will produce the same effect. The mother states that the child has always enjoyed being rubbed, and that 'from when quite a baby rubbing would bring out white marks.' It is important to remember that in the discussion on the two former cases Mr. Hutchinson and Mr. Baker were disposed to consider the skin condition as allied to the erythemata, more especially to urticaria perstans. Whilst this child was attending Dr. Lee, and also subsequently when I saw her, some other skin lesions appeared which deserve special attention.

On the back of the neck and on one ear and on the chin an impetiginous rash formed, which scabbed over. Underneath these scabs deep ulceration took place, leaving punched-out sores; where there was very little suppuration—for some time no attempt at granulation—the floor of the ulcers being covered with a thin serous discharge. There was considerable loss of substance, but ultimately granulation occurred, and these ulcers were filled up by cicatricial tissue, which in one place—viz., the back of the neck—now manifests a slight tendency to outgrow the level of the surrounding skin.

The child was in a low, febrile condition whilst this ulceration was going on, and at times she has had obstinate diarrhœa and has been pyrexial for weeks together. For some months she has suffered from strumous ophthalmia. She has large glands in the neck. I think there cannot be a doubt that she is a tuberculous child.

Rapid ulceration of the skin of the character which I have just described I have seen now in four cases associated with acute tuberculosis, and in one or two cases where there has been ultimate recovery there have been independent reasons to suspect the tuberculous diathesis. Dr. Lee informs me that this particular form of ulceration in children

has been described long ago by Hardy in his group of the scrofulides.

It cannot be too positively stated that in this case there is not the slightest reason to suspect congenital syphilis. The parents are healthy, respectable people. There is phthisis in the father's family, however, and, what is more to the point, with an interval of three years I made post-mortem examinations on two brothers of this patient, both of whom died of rapid acute tuberculosis.

So far as they go the ulceration of the skin and the diathesis of the child are in harmony with Dr. Thin's view as to the lupoid nature of the skin disease which is under discussion. It must be borne in mind, however, that in our case the ulceration of the skin did not appear to bear any distinct relation to the pigmented patches. These patches hitherto have not shown any tendency whatever to ulcerate.

It must still remain a question whether recurrent vaso-motor disturbances of the skin are not a factor in their causation.

XLIV.—*On the Microscopic Appearances of the Skin of a Patient whose case is described by* Mr. Morrant Baker *in the 8th volume of this Society's 'Transactions.'* By George Thin, M.D. *Communicated by* Mr. Morrant Baker. *Read May* 25, 1877.

In March of the present year Mr. Morrant Baker gave me some portions of skin which had been removed *post mortem* from a patient, the particulars of whose case he has related in the 8th volume of this Society's 'Transactions.' I am, therefore, indebted to him for the opportunity of examining the specimen. In regard to the subsequent history of the case Mr. Baker has furnished the following notes:—

'Little or no change occurred in the character of the eruption during the two years which elapsed between the date of the exhibition of the patient to the Society and his death. After death the eruption was still plainly visible, the greater number of the spots and wheals being, however, of a very faint yellowish tint, although where the skin was affected by hypostatic congestion they assumed a dark red or purplish colour, closely resembling the appearance they frequently presented during life.

'The patient, who was rather more than three years old at the time of death, had for many months suffered from obscure symptoms of mischief in the chest. In June 1876 he was admitted into the Evelina Hospital for Sick Children, where he was subsequently transferred to the care of Dr. Baxter. There is a note in the registration-book that in September 1876 the eruption had apparently undergone no change since his admission. He left the hospital in November 1876, and died rather suddenly in March 1877. At the post-mortem examination, which was made by Mr. Paley, the right lung, especially at the apex, was found tightly bound to the chest-wall by old and strong adhesions, and within these layers of lymph was a large abscess-sac, containing thick creamy pus. The tissue of both lungs seemed normal, and no other organ was found diseased. The spleen was rather large from congestion. The brain and spinal cord were not examined.

'The portions of skin preserved for examination were taken from the back of the thigh and leg, from the loin, and from the shoulder and upper arm, the disease being well marked in all these situations.'

The morbid appearances found on microscopical examination consist essentially in the presence in the corium of cells which are not found in the healthy structure, and in the disintegration and subsequent disappearance of the bundles of gelatinous or fibrillary tissue.

The cells are rounded, oval, or somewhat polygonal, and vary in size. The larger of them measure mm. 0·0105 in the longest diameter, and mm. 0·0075 in the shortest, with a spherical nucleus about mm. 0·005. The smaller of them are spherical, the diameter being mm. 0·006, with a spherical nucleus measuring mm. 0·004. The largest cell I measured was mm. 0·012 by mm. 0·009. They have all single spherical nuclei.

The smallest of these cells are identical in appearance with the structures known as lymph or white blood-corpuscles, and are composed of a round nucleus and a very scant amount of protoplasm. There are gradations between these and the larger cells which have also a round nucleus and a considerable proportion of a finely granular protoplasm. The nuclei of the smaller cells stain more deeply in logwood than those of the larger cells, there being also gradations in this respect corresponding to the size of the cell.

The first appearance of these cells is seen in a line in the

superficial stratum of the corium, parallel to the surface of the skin, and separated from the base of the rete mucosum by a narrow strip of healthy tissue. At this stage the tissue immediately under the affected line is also healthy. In this line of cells a bloodvessel can sometimes be detected, and it is then seen that the cells surround the vessel. The area of the cells with the vessel were found in this early stage in several sections to be only about mm. 0·018 broad, the distance from the affected part to the rete mucosum being mm. 0·075.

By following this line into the parts more extensively affected it is seen that the cellular infiltration takes place in the following manner:—

The cells extend downwards into the corium by following the hair follicles, arrectores pili muscles, sweat-ducts, and bloodvessels; also directly downwards by making their appearance in the spaces between the bundles which are nearest to the parts already affected. Even where this direct extension downwards has taken place to a considerable extent the narrow strip between the seat of disease and the rete mucosum is often found affected. For example, in a section in which the superficial cell-infiltration is at its thickest, an unaffected layer between it and the epidermis, measuring mm. 0·015, is found. Except at the hair-roots the deeper parts of the corium were found free from the cells, and the gelatinous tissue was there normal.

The cells accumulate around the hair-follicles, between the tissue of the corium and the fibrous sheath, and sometimes extend downwards beyond the hair papillæ. They are also found extending between the arrector pili muscle and the adjacent bundles of connective tissue. They do not penetrate between the muscle-cells. They surround the arteries, veins, and capillaries which ascend through the corium, the infiltration being continuous with that in the superficial layer of the cutis. The walls of these vessels could in many instances be seen of the normal thickness, and presenting no abnormal appearance. In some instances the cells could be traced for a short distance along a sweat-duct external to the structureless membrane.

At some parts the cell-infiltration followed the capillaries of the papillæ, in the earlier stages being limited to the immediate circumference of the vessel, and in the more advanced steps thickly infiltrating the adjacent bundles.

The disposition of the cells is in every instance at first

determined by the anatomical relations of the parts in which they are found, being, for example, found in rows between the bundles, but as the tissue of the corium breaks down they are found clustered in irregular masses.

In the parts where the cell-infiltration is most abundant the gelatinous tissue of the cutis has almost completely disappeared. When the process by which this has taken place was observed by teasing out thick sections it was seen that the bundles were formed of fibrillæ, amongst which granular matter was imbedded. As the diseased condition became more intense the granular matter became more abundant and the fibrillæ less prominent. The subsequent stages were obscured by the presence of the cells described above.

In thin sections it could be observed that the bundles were first split up into smaller portions, between which the cells were found. These minute parts of the bundles became smaller and the cells increased in number until nothing was left but a reticulum with cells.

This reticulum is partly composed of minute elastic fibres, which become more prominent as the gelatinous tissue disappears. It is to be noted that the elastic fibres were found unaffected.

The destruction of the gelatinous tissue had taken place in circumscribed patches in the superficial part of the cutis, and in some instances in a number of adjacent papillæ.

In some papillæ the normal tissue was replaced throughout by the reticulum and cells.

As illustrating the relation which the processes described bear to the bloodvessels, it is to be observed that a capillary vessel of normal size and appearance is sometimes found intact in the midst of the cell-infiltration.

In a few sections the cells could be traced from the root of the hair to the narrow ascending process of fat on which the root of the hair is placed, a few cells staining with logwood amongst the most superficial fat vesicles. In the portions of skin examined by me the morbid process had only in a few instances reached the fat-lobules, and was not found in the sweat-gland coils.

The epidermis was normal. In a very few sections the new cells were in contact with the rete mucosum; and as they were about the same size as the deeper cells of this layer, and as the nuclei stained similarly in both, the appearance of a growth of the rete inwards was similated. The

EXPLANATION OF THE PLATE.

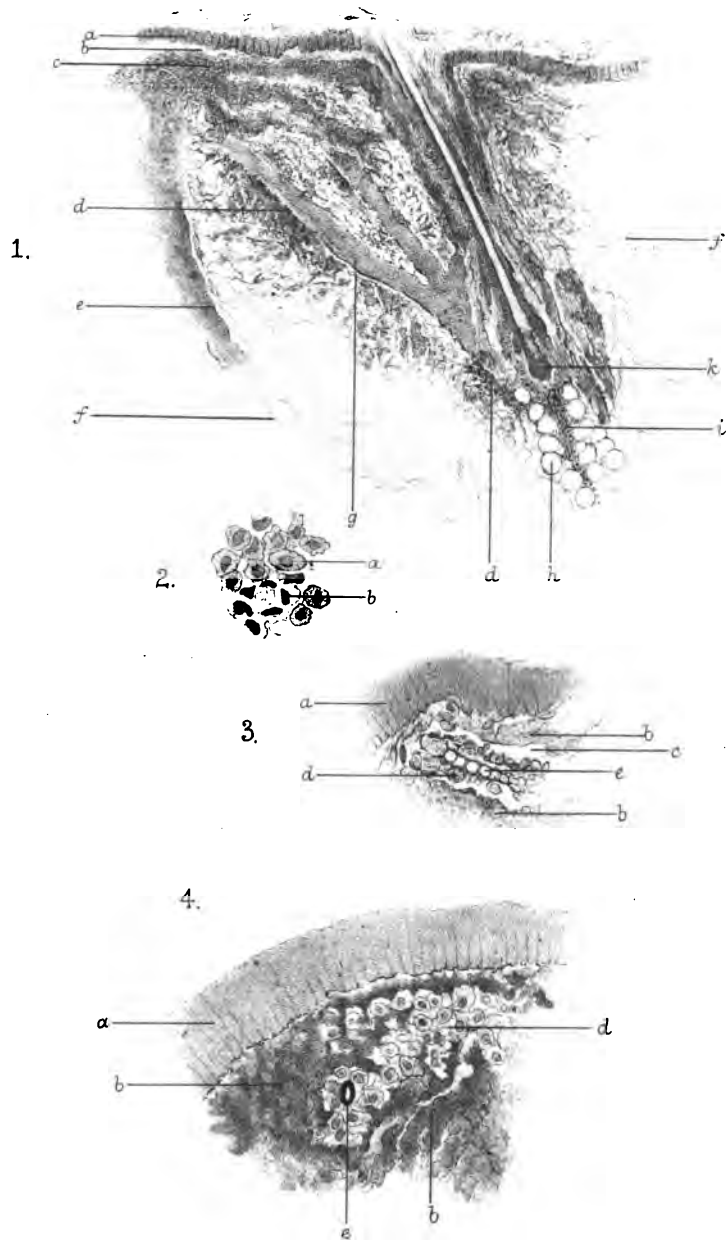
FIG. 1 shows the distribution of the cellular infiltration as seen by a low magnifying power. Figs. 2, 3, and 4 represent the cells, and their relations to the tissues of the skin as observed by a higher power.

FIG. 1.—*a*, mucous layer of the epidermis; *b*, unchanged superficial stratum of the corium between the cell-infiltration and the epidermis; *c*, more advanced degree of cell-infiltration in the upper part of the corium; *d*, cell-infiltration descending between the arrector pili and the adjacent connective tissue; *e*, cell-infiltration passing downwards along the bloodvessels; *f*, normal tissue of the corium which the cell-infiltration has not reached; *g*, arrector pili muscle; *h*, fat; *i*, cell-infiltration passing downwards amongst the fat vesicles; *k*, hair papilla.

FIG. 2.—From a section through a cluster of the new cells. *a*, one of the larger cells; *b*, one of four deeply-stained nuclei which mark the contour of a transverse section of a bloodvessel.

FIG. 3.—Section through a papilla, in which a capillary vessel containing blood-corpuscles is bounded by a zone with definite limits which separates the vessel from the normal tissue. It illustrates the mode by which the disease attacked and eventually undermined the papillæ. *a*, the rete mucosum; *b*, normal connective tissue; *c*, space between the capillary and the unaffected structure from which the normal tissue has disappeared; *d*, a characteristic cell immediately external to the vessel; *e*, capillary bloodvessel of normal calibre filled with red corpuscles.

FIG. 4.—This section illustrates the gradual breaking down of the superficial layer of the corium, and accumulation of cells. *a*, the rete mucosum; *b*, the gelatinous connective tissue of the skin; *c*, the newly-formed cells; *d*, transverse section of a bloodvessel in the midst of the cell-infiltration.



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Dr. Thin's Microscopical specimens of a rare form of Skin disease.

new cells, however, never showed the true characteristics of epidermic cells.

It now remains to consider the bearing of these microscopic appearances on the nature of the disease. By comparing the description I have given with Virchow's remarks on the pathology of lupus ('Die Krankhaften Geschwülste,' Bd. ii., p. 487) it will be seen that it corresponds exactly with the changes found in the earlier stages of that disease. From all other morbid processes which take place in the skin it can be distinguished by some peculiarity; from lupus it cannot be anatomically distinguished at all.

The appearances indicate a diseased condition which is only in its earliest stages, and this although it had lasted three years.

Further, when we consider that in some places the fibrillary tissue—the substance proper of the cutis—had disappeared altogether in patches from the superficial stratum of the corium and from the papillæ, its place being taken by a morbid product without cohesion or the conditions of growth and vitality, it is impossible to resist the conclusion that had the child lived some of the affected parts would have ulcerated.

XLV.—*On a Case of Excision of Elbow-joint.* By C. F. Maunder. *Read May* 25, 1877.

J. N., æt. 33, fell from his horse on to his right elbow on January 10, 1869. He sustained a most severe compound comminuted fracture of this articulation. Dr. Floyer, now of Old Ford, was called in, and requested my assistance. We agreed to remove the fragments and attempt to save the limb.

A few weeks previous to this (1868), while performing excision of the elbow on a man of the name of Earwaker, I discovered and pointed out to Mr. James Adams and others about me that an aponeurotic prolongation of the triceps passing between the olecranon and the external condyle to blend with the fascia of the forearm, and covering the anconeus muscle, could be raised *en masse*, and would therefore secure to the patient *active* extension of the forearm by the triceps muscle. He confirmed this observation

by dissection, and Earwaker's arm subsequently proved its value.

The same method was resorted to in the case of the gentleman (J. N.), who has just returned from abroad. He is present, and willing to show his arm.

The patient stated 'he had travelled all over the world, and, taking an interest in surgery, had shown his arm to surgeons in all parts; and the opinion generally expressed was that "it was the best arm in the world without a joint." He could perform almost every movement with it, and could compete successfully with the best at billiards, quoits, "the gloves," wrestling, and other trials of strength.'

The arm was examined, and the power of the triceps proved in several ways.

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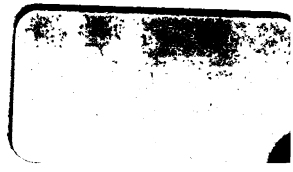
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